

September 9, 1998

This document was submitted to EPA by a registrant in connection with EPA's evaluation of this chemical and it is presented here exactly as submitted.

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July 18, 1996



**NALED REREGISTRATION:
MAGNITUDE OF THE RESIDUE IN GRASS**

| | |
|-------------------|------------|
| Case No.: | 0092 Naled |
| EPA Chemical No.: | 034401 |
| EPA Company No.: | 59639 |

Ms. Sherell Sterling
Office of Pesticide Programs, H7504C
Document Processing Desk: DCI-SRRD-0092
U.S. Environmental Protection Agency
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

RECEIVED
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Dear Ms. Sterling:

This letter is responding to your letter of June 24, 1996, requiring a commitment to conduct additional residue trials supporting pasture/rangeland grass within 24 months.

Valent agrees to provide data to address residue deficiencies for pasture/rangeland grass within the 24 month time frame requested, however we disagree with the products and uses impacted by EPA's assessment, and therefore with the scope of the work required. The reason for this is the existence of the established tolerance for area pest (mosquito and fly) control. This tolerance is acceptable to EPA as indicated in the RED Residue Chemistry Chapter, is supported by previously submitted data, and covers many of the pasture and rangeland uses cited in the Chemistry Branch II review.

In its March 6, 1986 Data Call-In Notice and Addendum to the Registration Standard for naled, EPA required residue data from representative commodities from all crop groups to support the tolerance for area pest (mosquito and fly) control. The appropriate data were developed and submitted (MRIDs 40407301, 40506401, 40633601), and subsequently accepted by EPA. The 17 field studies submitted were based on a maximum use rate of 0.25 lb a.i. per acre, with a 0-day pre-harvest interval (samples harvested within one hour of application).

Valent has reviewed all the labeled uses of naled for pasture and rangeland, and these are presented in table form attached. Only a few of these uses fall outside the scope of the area pest (mosquito and fly) control tolerance, based on the labeled target pest and maximum use rate. The attached table indicates which pasture/rangeland uses are and are not covered by the tolerance.

Therefore, Valent is hereby committing only to generate additional residue data to support the following uses:

- Maximum rate 0.4 lb a.i./acre use of the 12.6 lb/gal SC/L (DIBROM® Concentrate; EPA Reg. No. 59639-19) or 10.9 lb/gallon EC (TRUMPET™ Insecticide; EPA Reg. No. 59639-90) for horn fly control on cattle.
- Maximum rate 0.938 lb a.i./acre use of the 7.5 lb/gal EC (DIBROM® 8 Emulsive; EPA Reg. No. 59639-15) for control of grasshoppers, range caterpillars and armyworms in rangeland.

The remaining naled pasture/rangeland uses are already supported by acceptable data previously submitted to EPA in response to the March 6, 1986 Data Call-In.

If you have any questions regarding this response, please call Brent Solomon at our Washington, D.C. office (202) 872-4682.

Sincerely,

Daniel P. Fay

Daniel P. Fay
Project Manager
Registration & Regulatory Affairs

Attachment

cc: Susan Jennings/SR&RD
Robert Forrest/RD/PM Team 14

Naled Pasture/Rangeland Uses - Relationship to Area Pest (Mosquito and Fly) Control Tolerance at 40 CFR §180.215
July 18, 1996

| Use/Site | Maximum Use Rate | Registration(s) | Supported by Area Pest Control Tolerance? |
|---|--|---|---|
| For control of adult mosquitoes in pastures. | 0.1 lb a.i./acre by air. 0.02 lb a.i./ acre by ground | DIBROM® Concentrate (EPA Reg. No. 59639-19) | Yes |
| | | TRUMPET™ Insecticide (EPA Reg. No. 59639-90) | Yes |
| For control of blackflies, houseflies, gnats, certain other nuisance insects - small flying moths, crane flies, midges, adult stable flies in pastures. | 0.0938 lb a.i./acre by ground or air. | DIBROM® 8 Emulsive (EPA Reg. No. 59639-15) | Yes |
| | | DIBROM® Concentrate (EPA Reg. No. 59639-19) | Yes |
| | 0.23 lb a.i./acre by air. 0.02 lb a.i./ acre by ground 0.15 lb a.i./acre by air only | TRUMPET™ Insecticide (EPA Reg. No. 59639-90) | Yes |
| | | Fly Killer D (EPA Reg. No. 59639-18) | Yes |
| For control of mosquitoes, gnats, and houseflies in pastures | 0.23 lb a.i./acre by ground or air. | DIBROM® 8 Emulsive (EPA Reg. No. 59639-15) | Yes |
| For reduction of livestock pests (gnats, stable flies, house flies, mosquitoes, horn flies) in rangelands | 0.23 lb a.i./acre by ground or air. | DIBROM® Concentrate (EPA Reg. No. 59639-19) | No |
| For control of horn flies on range cattle (aerial application only; maximum rate 0.4 lb a.i./acre). | 0.4 lb a.i./acre by air only | TRUMPET™ Insecticide (EPA Reg. No. 59639-90) | No |
| | | DIBROM 8 Emulsive (EPA Reg. No. 59639-15) | No |
| For control of grasshoppers, range caterpillars and armyworms in rangeland | 0.938 lb a.i./acre by ground or air. | | |

Final Report

NALED

Shaughnessy No. 034401

Case No. 0092

(CBRS No. 13216, DP Barcode D199394)

TASK 2B

**Reregistration Eligibility Decision:
Residue Chemistry Considerations**

August 5, 1994
updated April 2, 1996

Contract No. 68-D2-0053

Submitted to:
U.S. Environmental Protection Agency
Arlington, VA 22202

Submitted by:
Dynamac Corporation
The Dynamac Building
2275 Research Boulevard
Rockville, MD 20850-3268

NALED

REREGISTRATION ELIGIBILITY DECISION

RESIDUE CHEMISTRY CONSIDERATIONS

Shaughnessy No. 034401; Case 0092

(CBRS No. 13216; DP Barcode D199394)

Task 2B

TABLE OF CONTENTS

| | page |
|--|------|
| INTRODUCTION | 1 |
| REGULATORY BACKGROUND | 1 |
| SUMMARY OF SCIENCE FINDINGS | 3 |
| GLN 171-3: Directions for use | 3 |
| GLN 171-4 (a): Plant Metabolism | 3 |
| GLN 171-4 (b): Animal Metabolism | 4 |
| GLN 171-4 (c) and (d): Residue Analytical Methods-Plants and Animals | 6 |
| GLN 171-4 (e): Storage Stability | 8 |
| GLN 171-4 (k): Magnitude of the Residue in Plants | 9 |
| Root and Tuber Vegetables Group | 10 |
| Leaves of Root and Tuber Vegetables Group | 10 |
| Leafy Vegetables Group (except Brassica Vegetables) | 10 |
| Brassica (Cole) Leafy Vegetables Group | 11 |
| Legume Vegetables (Dry or Succulent) Group | 12 |
| Foliage of Legume Vegetables Group | 13 |
| Fruiting Vegetables Group | 13 |
| Cucurbit Vegetables Group | 14 |
| Citrus Fruits Group | 15 |
| Stone Fruits Group | 15 |
| Small Fruits and Berries Group | 15 |
| Tree Nuts Group | 16 |
| Cereal Grains Group | 16 |
| Forage, Fodder, and Straw of Cereal Grains Group | 16 |
| Grass Forage, Fodder, and Hay Group | 16 |
| Non-grass Animal Feeds Group | 17 |
| Miscellaneous Commodities | 17 |
| Wide Area and General Outdoor Treatments | 18 |
| GLN 171-4 (l): Magnitude of the Residue in Processed Food/Feed | 19 |
| GLN 171-4 (j): Magnitude of the Residue in Meat, Milk, Poultry, and Eggs | 20 |
| GLN 171-5: Reduction of Residues | 21 |

| | |
|---|----|
| GLN 165-1 and 165-2: Confined/Field Rotational Crops | 21 |
| TOLERANCE REASSESSMENT SUMMARY | 42 |
| Tolerances Listed Under 40 CFR §180.215 | 42 |
| Tolerances That Need To Be Proposed Under 40 CFR §180.215 | 43 |
| Food/Feed Additive Tolerance Issues | 43 |
| CODEX HARMONIZATION | 46 |
| DIETARY EXPOSURE | 47 |
| AGENCY MEMORANDA CITED IN THIS DOCUMENT | 48 |
| MASTER RECORD IDENTIFICATION NUMBERS | 52 |

NALED

REREGISTRATION ELIGIBILITY DECISION

RESIDUE CHEMISTRY CONSIDERATIONS

Shaughnessy No. 034401; Case 0092

(CBRS No. 13216; DP Barcode D199394)

Task 2B

INTRODUCTION

Naled (1,2-dibromo-2,2-dichloro-ethyl dimethyl phosphate) is a halogenated organophosphorus insecticide/acaricide manufactured by Valent U.S.A. Corporation under the trade name Dibrom®. In a 4/13/94 use profile presentation made Valent to the EPA's Naled RED Team, the registrant indicated that 50% of total naled use in the United States is for mosquito and fly abatement in municipalities, residential areas, swamps, tidal marshes, and woodlands. The Gulf states, east coast states, and California are the principal regions where naled may be applied during warm months to eliminate breeding sites of these area pests or to act as larvacide or adulticide. Only 36% of naled use is for agricultural sites. Grapes, citrus fruits, and cole crops are the principal crops where naled may be applied and these crops account for 22%, 19%, 13%, respectively, of the total agricultural uses for naled.

According to the Agency's Reference Files System (REFS), in a search conducted 3/15/94, naled is presently registered for use on a variety of food and feed crops including alfalfa, almonds, beans (dry and succulent), broccoli, Brussels sprouts, cabbage, cauliflower, celery, collards, cotton, eggplant, grapefruit, grapes, grasses (pasture and rangeland), kale, lemons, melons, oranges, peas (succulent), peaches, peppers, safflower, squash (summer), strawberries, sugar beets, tangerines, tobacco, and walnut. Naled is also presently registered for mosquito abatement and fly control in terrestrial non-food areas such as residential areas, municipalities, tidal marshes, swamps, woodlands, livestock pastures, feed lots, farm buildings, dairy barns, and feed and forage areas. Minor registered uses of naled include greenhouse/ornamental pest control, outside residential areas/lawns, rangeland grasshopper control, miscellaneous non-food indoor uses, and pet flea collars. The naled formulations registered for use on food/feed sites include the dust (D), soluble concentrate/liquid (SC/L), and the emulsifiable concentrate (EC). Naled is typically applied on registered crops as a dormant, delayed dormant, or foliar spray application using ground, aerial, or airblast equipment.

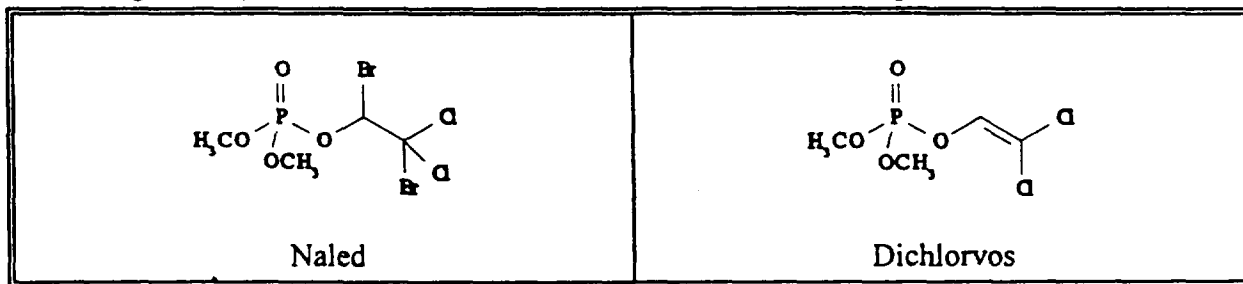
REGULATORY BACKGROUND

Naled was returned to the reregistration process on 6/30/83, based on a review of all available data which indicated that no definitive evidence existed which met or exceeded the Special Review risk criteria (mutagenicity, fetotoxicity, and reproductive effects). Naled was the subject of: (i) a Registration Standard Guidance Document issued 7/83; (the Residue

Chemistry Science Chapter of the Registration Standard was dated 10/25/82); (ii) an Addendum I to the Registration Standard dated 9/20/85; (iii) an Addendum II to the Registration Standard dated 2/6/86; and (iv) a Registration Standard Update dated 6/8/90. These previous documents summarized regulatory conclusions of available residue chemistry data and specified what additional data were required for reregistration purposes. Several submissions of data have been received since the Update. Since issuance of the Update, several naled labels have been amended, changing use patterns for many food and feed crops. The information contained in this document outlines the Residue Chemistry Science Assessments with respect to the reregistration of naled.

Tolerances are established for residues of naled (1,2-dibrom-2,2-dichloroethyl dimethyl phosphate) and its conversion product 2,2-dichlorovinyl dimethyl phosphate (dichlorvos), calculated as naled equivalents in/on raw agricultural commodities and in animal products [Source: 40 CFR §180.215]. Tolerances range from 0.05 ppm in meat, milk, and eggs to 10.0 ppm in forage grasses and legumes. No food/feed additive tolerances have been established. The chemical structures of the compounds which are presently regulated are presented in Figure A. Adequate enforcement methods are available for the determination of these regulated compounds in/on plant and livestock commodities.

Figure A: Chemical structures of naled and its conversion product, dichlorvos.



Dichlorvos is a List A chemical and is currently in Special Review. Dichlorvos has been found to induce cancer in animals. A decision document for Dichlorvos was published in 47 FR 45075 on 10/13/82, PD 1 was published in 53 FR 5542 on 2/24/88, and a PD 2/3 will be issued by EPA shortly. EPA has published a final rule, revoking the food additive tolerances for residues of dichlorvos in packaged or bagged nonperishable processed food as of 3/10/94 because these tolerances violate the Delaney clause in Section 408 of the FFDCA. However, the revocation has been stayed.

Naled itself is not assessed by TOX as a carcinogen. A reasonable reliable dietary risk assessment of naled uses can be performed using the available residue data. Anticipated residue data are available for naled uses. Dichlorvos is a metabolite of naled. A dietary exposure assessment for dichlorvos residues including those resulting from the use of naled is in preparation in support of the Special Review of naled.

SUMMARY OF SCIENCE FINDINGS

GLN 171-3: Directions for use

A REFS search conducted 3/15/94 indicated that there are nine naled end-use products (EPs) with food/feed uses registered to Valent U.S.A Corporation. These EPs are presented below.

| EPA Reg. No. | Acceptance Date | Formulation Class | Product Name |
|--------------|-----------------|-------------------|------------------------------|
| 59639-15 * | 3/21/94 | 7.2 lb/gal EC | Dibrom® 8 Emulsive |
| 59639-18 | 5/5/92 | 3.6 lb/gal EC | Valent™ Fly Killer D |
| 59639-19 * | 2/28/94 | 12.6 lb/gal SC/L | Dibrom® Concentrate |
| 59639-21 | 5/25/92 | 1% RTU | Dibrom® Fly & Mosquito Spray |
| 59639-90 | 3/2/95 | 10.8 lb/gal EC | Trumpet EC |

* Including OR900020, WA890019, ID900016, UT940003, and FL-890008. * Including FL890003, GA770011, and MD810023; NY920002 is a non-food use label.]

A comprehensive summary of the registered food/feed use patterns of naled, based on these product labels, is presented in Table A. An examination of Valent's naled end-use products indicates that these labels do not specify the maximum number of applications per growing season (or maximum seasonal rate) allowed for registered crops. For reregistration purposes, the registrant is required to specify the maximum number of applications per growing season (or maximum seasonal rate) that may be allowed for each registered crop. The required label revisions must be supported by adequate residue data; refer to "GLN 171-4 (k): Magnitude of the Residue in Plants" section for a discussion of seasonal application rates which are currently supported by field residue data.

A tabular summary of the residue chemistry science assessments for reregistration of naled is presented in Table B. The conclusions regarding the reregistration eligibility of naled on the crops listed in Table B are based on the use patterns registered by the basic producer, Valent U.S.A. Corporation. When end-use product DCIs are developed (e.g., at issuance of the RED), RD should require that all end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the basic producer labels.

GLN 171-4 (a): Plant Metabolism

The qualitative nature of the residue in plants is adequately understood. Naled is generally considered to be non-systemic based on studies with a variety of plants including cucumbers, cotton, and Swiss chard. Metabolism studies with oranges and tomato processed fractions have also been conducted to investigate the nature and magnitude of organic brominated components of the residue derived from naled *per se* or from its bromine-containing impurities. These studies indicated that the only residues of organic bromine compounds are

9

naled, the parent, and metabolite bromodichloroacetaldehyde (BDCA), both of which are rapidly debrominated by sulfhydryl compounds or by hydrolysis.

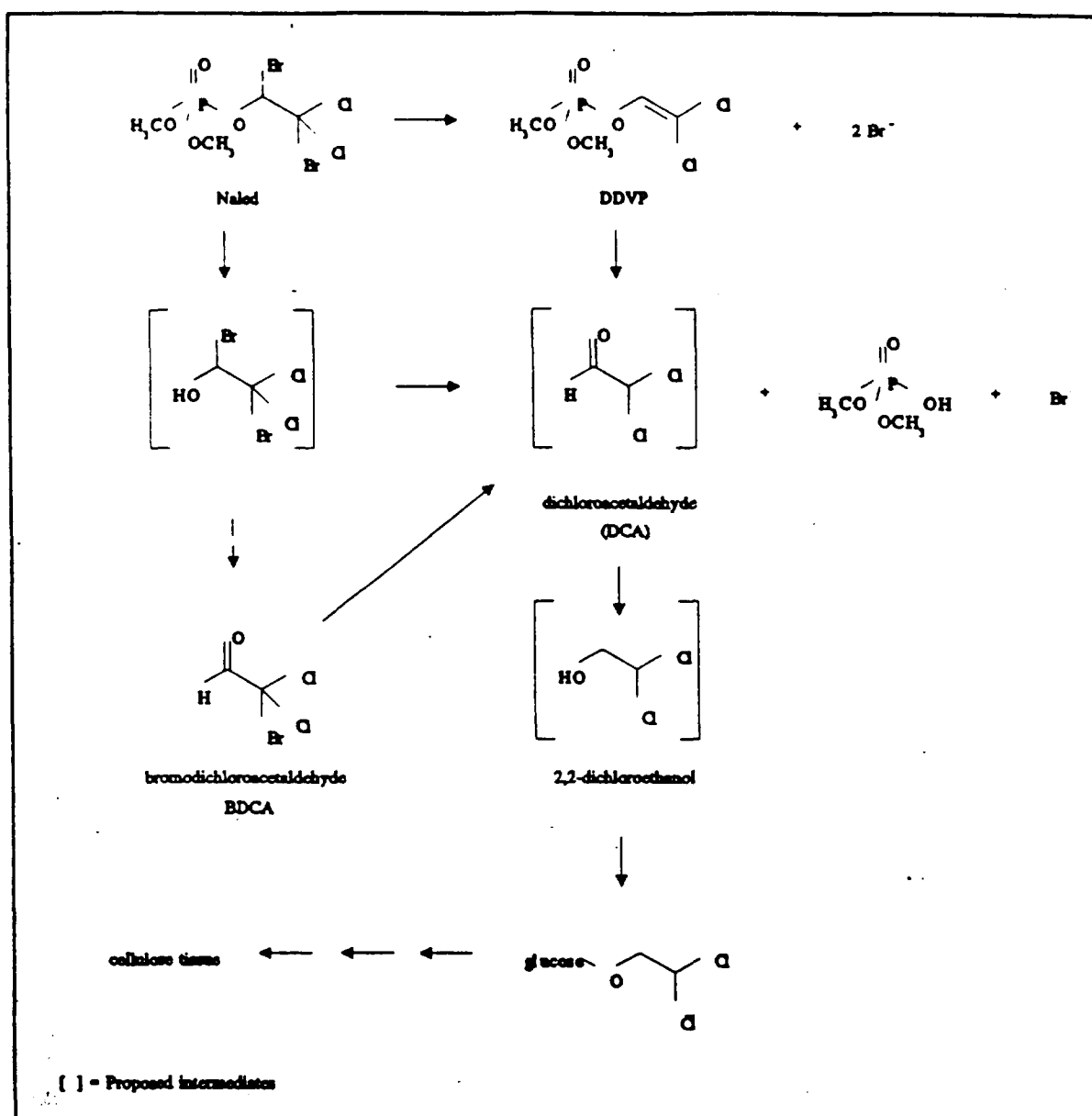
The results of the submitted plant metabolism studies are consistent with the scientific literature on pesticide metabolism. The major pathway is debromination to form dichlorvos. A minor pathway is hydrolysis to dimethylphosphate and BDCA. Dichlorvos may be lost by two routes, evaporation from leaf surfaces under field conditions and/or hydrolysis to form dimethylphosphate and dichloroacetaldehyde (DCA). The latter is converted to 2,2-dichloroethanol which is then conjugated and/or incorporated into naturally occurring plant components. The dimethylphosphate component of hydrolyzed naled is sequentially degraded to monomethyl phosphate and inorganic phosphates. The chemical structures of the terminal residues of concern, naled and dichlorvos, are presented in Figure A. The metabolic pathway is shown in Figure B; proposed intermediates are shown in brackets.

GLN 171-4 (b): Animal Metabolism

The qualitative nature of the residue in animals is adequately understood based on acceptable poultry and ruminant metabolism studies reflecting oral exposure. The residues of concern in animal commodities, naled and dichlorvos, are also those which are currently included in the tolerance expression. The HED's Greybeard Committee waived the requirements for an additional poultry metabolism study reflecting direct dermal treatment because the registrant does not intend to support this use; Valent has subsequently deleted direct dermal treatment of naled on poultry from its product labels. The salient features of the available animal metabolism studies are described below.

In the poultry metabolism studies, laying hens received either a single dose of [ethyl-1-¹⁴C]naled at 40 ppm by gelatin capsule or were dosed twice daily with [ethyl-1-¹⁴C]naled at 40 ppm by gelatin capsule for ten consecutive days. The maximum total radioactive residues (TRR, expressed as naled equivalents) for the singly dosed hens were: (i) 0.17 ppm in fat and 14.0 ppm in kidney 2 hours after dosing; (ii) 0.05 ppm in fat and 2.3 ppm in liver 24 hours after dosing, and; (iii) 1.5 ppm in liver and <1.0 ppm in all other tissues 96 hour after dosing. The maximum TRR for the multi-dosed hens were 42.7 ppm in kidney, 19.0 ppm in liver, ≈3.3 ppm in muscle and skin, and 1.3 ppm in fat. The radioactive residue levels were higher in egg shell than in egg contents; residue levels in the egg contents increased with time. The characterized radioactive residues in both tissues and eggs were found to be very similar, irrespective of whether hens received single or multiple doses of the test substance. The sulfate conjugate of dichloroethanol was the major component (0.1 ppm in fat to 10 ppm in kidney) identified in all tissues. The parent compound, naled, was not identified (<0.01 ppm) in any tissues except gizzard. Naled plus mostly dichlorvos were found in gizzard (0.6 ppm) after 2 hours in singly dosed hens and as a minor metabolite (0.01-0.46 ppm) in tissue samples of multi-dosed hens. No residues of BDCA or other organic brominated compounds were found in residues or extracts of any of the tissues or excreta.

Figure B. The major metabolic pathways of naled in plants.



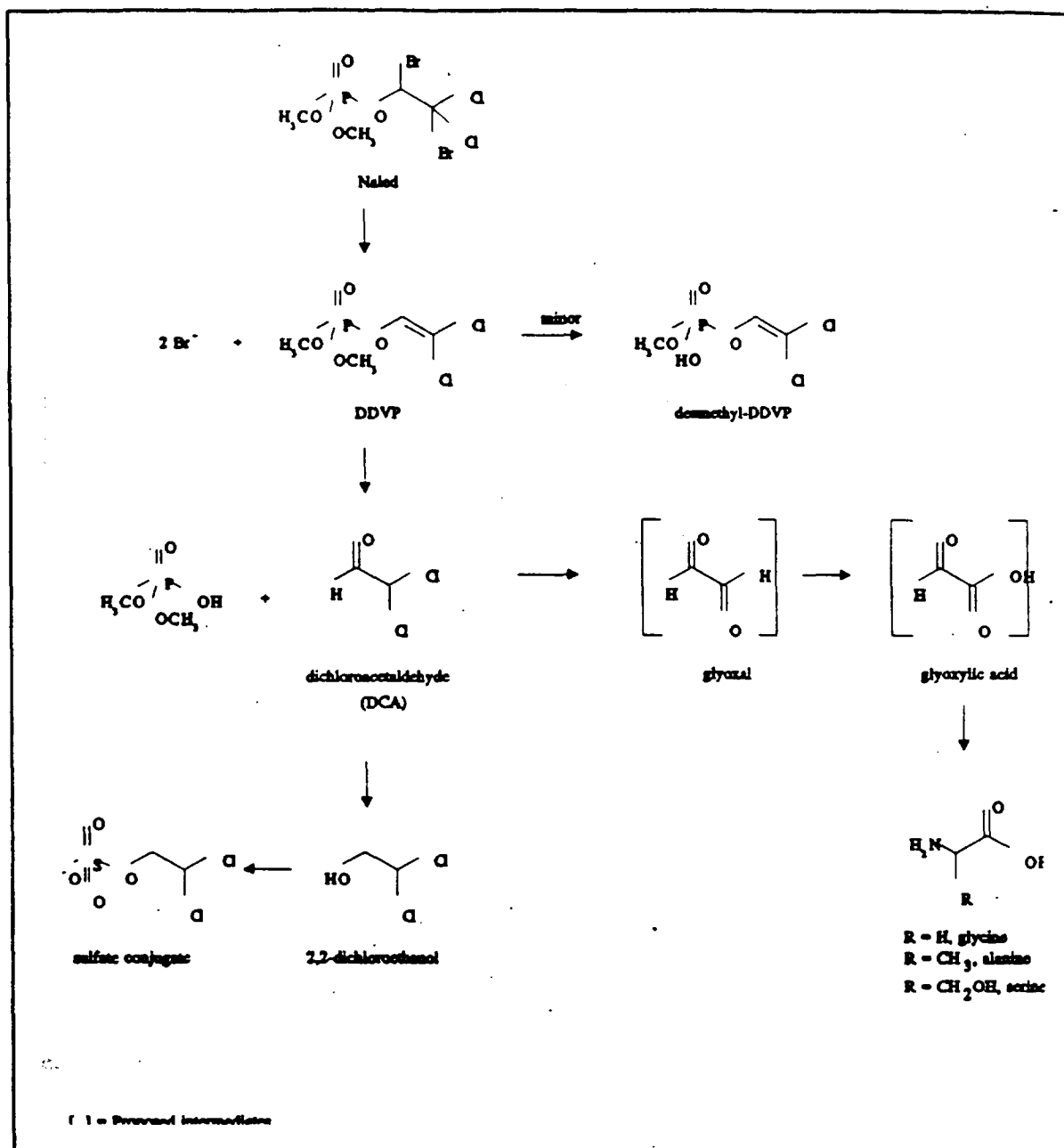
In the ruminant metabolism studies, a cow was dosed with [³²P]naled at 20 ppm (based on body weight) and a goat with [¹⁴C]naled at 107 ppm. In the cow study, approximately 100% of the recovered radioactivity present in the urine was accounted for by the naled degradates mono- and dimethyl phosphates and demethylated dichlorvos. The TRR were <0.30 ppm in fat 1.5-6 hours after dosing and 7.8 ppm in milk 18 hours after dosing; the milk TRR declined to 2.1 ppm 120-144 hours after dosing. In the lactating goat, dosed with ¹⁴C-naled at 107 ppm in the diet for three consecutive days, the TRR were 9.4 ppm in kidney, 21.0 ppm in liver, and 7.2-13.3 ppm in milk. No naled or dichlorvos was identified in milk (<0.005 ppm) or tissues (<0.05 ppm). Dichloroethanol conjugates and desmethyl-dichlorvos were not identified in milk (<0.05 ppm). Liver and kidney contained up to 0.3 ppm dichloroethanol conjugates and 0.1 ppm desmethyl-dichlorvos; other tissues showed only traces of both of these metabolites.

The metabolic pathway in ruminants and poultry following oral exposure is shown in Figure C; the proposed intermediates are shown in brackets. Naled is initially debrominated to yield dichlorvos. The major pathway is cleavage of dichlorvos to dimethylphosphate and dichloroacetaldehyde (DCA). A minor pathway is O-demethylation to form desmethyl-dichlorvos. In part, DCA is reduced to dichloroethanol which is conjugated with endogenous sulfate to form the sulfate ester conjugate of dichloroethanol. DCA is dechlorinated and oxidized sequentially to form glyoxal and then glyoxylic acid which is incorporated into amino acids (glycine, alanine, serine, etc.) and proteins.

GLN 171-4 (c) and (d): Residue Analytical Methods-Plants and Animals

Adequate residue analytical methods are available for the purposes of reregistration. Two GC methods, Method I and A, are listed in the Pesticide Analytical Manual (PAM, Vol. II, Section 180.215) for tolerance enforcement. Method I, a GC method using a thermionic detector (RM-3G), is applicable for the separate analysis of residues of naled and dichlorvos in/on crops and in animal commodities and milk. Method A, a microcoulometric GC method (RM-3C), is applicable for the combined residues of naled and dichlorvos in/on fruits and vegetables. The limits of detection are 0.01-0.02 ppm (milk and tissues) and 0.05 ppm, for Method I and Method A, respectively. Other GC methods (RM-3G-3 and the method of Boone) using thermionic detectors for separate determination of naled and dichlorvos are adequate for tolerance enforcement purposes. In addition, a GC method (RM-3G-4 revision of Method RM-3G-3) using nitrogen-phosphorous detection is adequate for enforcement of tolerances for residues in almonds, broccoli, oranges, and alfalfa. The limit of detection for both compounds is 0.01 ppm. A revised version of the residue analytical method RM-3G-4 has been reviewed; additional revisions to this method are required before it can be forwarded to FDA for inclusion in PAM, Vol. II. Valent has agreed to make the necessary changes.

Figure C. The major metabolic pathways of naled in poultry and ruminants.



For residue data collection, adequate methods for analysis of naled and its metabolite dichlorvos either in combination or separately are available. Methods RM-3, RM-3A, and RM-3E are cholinesterase inhibition methods, methods RM-3G and RM-3G-3 are GC methods using thermionic detection, and method RM-3C and the method of Boone are microcoulometric GC methods. Method RM-3 determines naled and dichlorvos in combination, method RM-3C determines naled and dichlorvos as dichlorvos, and methods RM-3A, RM-3E, RM-3G, and the method of Boone determine naled and dichlorvos separately. Residue data submitted for tolerance reassessment were collected using the current or proposed enforcement methods. The registrant provided adequate method validation data to verify the suitability of these methods for data collection.

The FDA PESTDATA database dated 1/94 (PAM Vol. I, Appendix II) indicates that naled and dichlorvos are completely recovered (>80%) using multiresidue method PAM Vol. I Section 302 (Luke method) and not recovered using Sections 303 (Mills, Onley, Gaither method) and 304 (Mills fatty food method). However, dichlorvos has a short relative retention time and is detected only using low GC column temperatures ("early eluter" conditions).

GLN 171-4 (e): Storage Stability

The requirements for storage stability data are not fully satisfied for the purposes of reregistration. Storage stability data are adequate to support all existing field trial data on raw agricultural commodities relied upon for reregistration. Information concerning the storage intervals and conditions of residue data previously submitted in support of tolerance establishment has been submitted. Storage stability data are adequate to support existing livestock feeding studies.

Data which depict the decline in levels of naled and its metabolite dichlorvos in commodities stored under the range of conditions and for the range of intervals specified are required for any crops for which the registrant wishes to establish or re-establish tolerances/registration. Finally, the outstanding field trials and processing studies are required to be validated by adequate storage stability data.

Storage stability studies have been conducted using fortified samples of beans, celery, citrus fruits, peas, and strawberries. Residues of naled and dichlorvos are stable in/on hexane extracts of treated beans, peas, and citrus fruits stored at 4 C for approximately 9 months. Residues of naled remained stable in/on oranges and strawberries stored frozen (-20 C) for 1 month, but by the end of 6 months, naled residues can convert to dichlorvos. We note that Method I of PAM and method RM-3G-4 specify that samples should be extracted within 24 hours of sample receipt (and within 48 hours of sample collection) and that extracts should be stored frozen at -20 C until analysis.

Additional dichlorvos storage stability studies are reported in the Dichlorvos Registration Standard dated 1/86. No significant reduction of residues were reported in samples of sorghum, figs, and swine tissues following fortification of these commodities with dichlorvos

at 0.005 to 5.0 ppm and storage of fortified samples under frozen conditions (temperature unspecified) for up to 12 weeks. In addition, flour and pinto beans were fortified with dichlorvos at 6.25 and 2.5 ppm and stored under ambient conditions for up to 28 days. The data indicate that the dichlorvos residues decline rapidly under ambient storage conditions.

Storage stability data are not available to support processing studies. Additional data are required.

GLN 171-4 (k): Magnitude of the Residue in Plants

The reregistration requirements for magnitude of the residue in plants are fulfilled for the following commodities: almond hulls; almond nutmeat; beans (dry and succulent); bean vines; broccoli; Brussels sprouts; celery; cottonseed; eggplant; grapefruit; grapes; grass forage; hops; lemons; melons; oranges; peaches; peas (succulent); pea vines; peppers; safflower seed; spinach (and chard); squash, summer; strawberries; sugar beet roots; sugar beet tops; tangerines; and walnuts. Adequate field trial data depicting the combined residues of naled and dichlorvos (expressed as naled) following treatments according to the maximum registered use patterns have been submitted for these commodities. The reregistration requirements for magnitude of the residue in wide area and general outdoor treatments for area pest (mosquito and fly) are also fulfilled.

Additional data are required for the following commodities: bean (cowpea) hay; cabbage; cauliflower; collards; cucumbers; grass hay; lettuce; mushrooms; pea, field, hay; rice grain and straw; safflower; soybeans; soybean forage and hay (or a feeding restriction); squash, winter; tobacco; tomatoes; and turnip roots and tops. The required data for collards will be translated to kale. The required data for winter squash will be translated to pumpkins. Alternatively, instead of submitting field trial data for cowpea hay and field pea hay, the naled use may be restricted to beans and peas for human consumption only.

The Naled Reregistration Standard Guidance Document dated 7/83 and the Naled Reregistration Standard Update Residue Chemistry Chapter dated 6/8/90 previously required data reflecting use of the dust (D) formulation according to the maximum registered use patterns on a number of crops. Valent responded to these requirements by amending its product labels for the 4% D formulation (EPA Reg. Nos. 59639-14 and 59639-46) to delete all food/feed uses, except on grapes. Although the Agency no longer requires data for dust formulations when there are data available for a wetting spray at the same rate, a much higher application rate is allowed for the 4% D on grapes. As a consequence, residue data reflecting application of a D formulation are required on grapes.

Valent has requested the reinstatement of the following use sites that were voluntarily canceled by Chevron (previous registrant): eggplant, hops, melons, peaches, peppers, pumpkins, spinach, squash, and Swiss chard. The Chemistry Branch has considered this request (CB No. 12128, 12/16/93, D. McNeilly). A summary of the available data, reinstatement request, and reregistration requirement status by crop group is presented below.

Root and Tuber Vegetables Group

Sugar beet roots: The combined residues of naled and dichlorvos (expressed as naled) were nondetectable (≤ 0.04 ppm) in/on sugar beet roots harvested 2 days following the final of up to 5 foliar applications of the EC formulation using ground and aerial equipment at 1.0-4.0 lb ai/A/application (1.1-4.4x the maximum single application rate). The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on sugar beet roots may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.

Turnip roots: Valent does not have registered uses of naled on turnip. However, a REFS search conducted 3/15/94 identifies turnip as an active use site for naled. RD should require that all registered uses of naled on turnips be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on turnips, then residue data reflecting the maximum registered use patterns are required and an appropriate tolerance for turnip roots must be proposed.

Leaves of Root and Tuber Vegetables Group

Sugar beet tops: The combined residues of naled and dichlorvos (expressed as naled) were ≤ 0.5 ppm in/on sugar beet tops harvested 2 days following the final of up to 5 foliar applications of the EC formulation using ground and aerial equipment at 1.0-4.0 lb ai/A/application (1.1-4.4x the maximum single application rate). The available data adequately support the established 0.5 ppm tolerance for the combined residues of naled and dichlorvos in/on sugar beet tops.

Turnip tops: Valent does not have registered uses of naled on turnips. However, a REFS search conducted 3/15/94 identifies turnips as an active use site for naled. RD should require that all registered uses of naled on turnips be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on turnips, then residue data reflecting the maximum registered use patterns are required and an appropriate tolerance for turnip tops must be proposed.

Leafy Vegetables Group (except Brassica Vegetables)

Celery: The combined residues of naled and dichlorvos (expressed as naled) were 0.29-0.88 ppm in/on untrimmed celery and 0.12-0.63 ppm in/on trimmed celery harvested 1 day following the final of 5 foliar applications of the EC formulation using ground equipment at 1.35 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 3.0 ppm tolerance for the combined residues of naled and dichlorvos in/on celery may be too high and that a tolerance of 1 ppm would be more appropriate. The registrant should propose a new tolerance level.

Lettuce: Naled is presently not registered by Valent for use on lettuce under Section 3 of FIFRA. However, a REFS search conducted 3/15/94 identifies lettuce as an active use site for naled and Valent has a 24(c) registration for use of naled on lettuce. RD should require that all registered uses of naled on lettuce be canceled and the established lettuce tolerance be revoked. Alternatively, if Valent or other registrants intend to support the use of naled on lettuce, then residue data reflecting the maximum registered use patterns are required.

Spinach: Naled is registered by Valent for use on spinach on one of its end-use products (EPA Reg. No. 59639-15). Based on available spinach crop field trials, a tolerance of 3 ppm will be adequate.

Swiss chard: Naled is presently not registered by Valent for use on Swiss chard; it is, however, an active use site according to a REFS search conducted 3/15/94. Valent has requested the reinstatement of Swiss chard as a site on one of its end-use products (EPA Reg. No. 59639-15). Valent further requested that the planned field residue data for spinach be translated to Swiss chard. CBRS previously concluded that spinach data may be translated to support the proposed Swiss chard uses. Toxicology considerations permitting, Swiss chard can be reinstated provided the application rate is the same or less and the PHI is the same or longer as that for spinach.

Brassica (Cole) Leafy Vegetables Group

Broccoli: The combined residues of naled and dichlorvos (expressed as naled) were <0.02 ppm (nondetectable) in/on broccoli from tests using aerial equipment and <0.09 ppm from tests using ground equipment; all samples were harvested 1 day following the final of 4 foliar applications of the EC formulation at 1.8 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 1.0 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on broccoli may be too high and that a tolerance of 0.1 ppm would be more appropriate. The registrant should propose a new tolerance level.

Brussels sprouts: No field residue data for Brussels sprouts are available. However, the Naled Update Residue Chemistry Chapter concluded that no data are required for reregistration purposes since the existing data for broccoli will be translated to Brussels sprouts. The registered use patterns of naled on broccoli and Brussels sprouts are identical.

Cabbage: The Naled Update Residue Chemistry Chapter required additional field residue data reflecting aerial application of a representative EC formulation. Since issuance of the Update, the Agency has revised its policy (see PR Notice 93-2 dated 2/11/93) regarding the need for separate data reflecting aerial vs. ground equipment. According to PR Notice 93-2, no data reflecting aerial equipment will be required provided that the pesticide product label specifies that aerial applications are to be made in a minimum of 2 gal/A for field crops and that adequate data are available from use of ground equipment reflecting the same application rate, number of applications, and PHI. The currently specified spray volumes (minimum of 10

gal/A) for aerial equipment on the registrant's end-use product label are in compliance with PR Notice 93-2.

The Update concluded that the available data reflecting application of an EC formulation using ground equipment were inadequate because of poor geographic representation. Attempts to translate data from other representative members of Brassica or leafy vegetable groups with similar registered use patterns are not feasible at this time because of outstanding deficiencies on many of these representative crops. Therefore, the requirement for additional cabbage residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remains outstanding. Tests must be conducted in the states specified in the Naled Update Residue Chemistry Chapter. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.

Cauliflower: The Naled Update Residue Chemistry Chapter required additional field residue data reflecting aerial application of a representative EC formulation. It was concluded that the available cauliflower data reflecting application of an EC formulation using ground equipment were inadequate because of poor geographic representation. The registrant has complied with the requirements of PR Notice 93-2 following an examination of the registrant's product labels. The requirement for additional cauliflower residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remains outstanding. Tests must be conducted in the states specified in the Naled Update Residue Chemistry Chapter. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.

Collards: The Naled Update Residue Chemistry Chapter required additional field residue data reflecting aerial application of a representative EC formulation. It was concluded that the available collards data reflecting application of an EC formulation using ground equipment were inadequate because of poor geographic representation. The registrant has complied with the requirements of PR Notice 93-2 following an examination of the registrant's product labels. The requirement for additional collards residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remains outstanding. Tests must be conducted in states specified in the Naled Update Residue Chemistry Chapter. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.

Kale: Adequate field residue data for kale are not available. However, the Naled Update Residue Chemistry Chapter concluded that no data are required for reregistration purposes since the requested data for collards will be translated to kale. The registered use patterns of naled on collards and kale are identical.

Legume Vegetables (Dry or Succulent) Group

Beans (dry and succulent): The combined residues of naled and dichlorvos (expressed as naled) were <0.02 ppm in/on samples of whole seed and pod of lima beans and snap beans,

and dry shelled lima beans harvested 1 day following the final of up to 7 foliar applications, made at 7- to 22-day retreatment intervals, of the EC formulation using ground and aerial equipment at 1.35 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on beans (dry and succulent) may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.

Peas (succulent): The combined residues of naled and dichlorvos (expressed as naled) were <0.02-0.04 ppm in/on samples of whole seed and pod of peas, and dry shelled peas harvested 1 day following the final of up to 3 foliar applications, made at 7-day retreatment intervals, of the EC formulation using ground and aerial equipment at 1.35 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 0.5 ppm tolerance for the combined residues of naled and dichlorvos in/on peas (succulent) may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.

Soybeans: Valent does not have registered uses of naled on soybeans. However, a REFS search conducted 3/15/94 identifies soybeans as an active use site for naled. RD should require that all registered uses of naled on soybeans be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on soybeans, then residue data reflecting the maximum registered use patterns are required and appropriate tolerance for soybeans must be proposed.

Foliage of Legume Vegetables Group

The established 10-ppm crop group tolerance for "legumes, forage" is inappropriate because Valent does not intend to support naled uses on soybeans which is the third representative crop of the foliage of legume vegetables group, and Valent is not supporting tolerances on foliage of beans and peas. Therefore, this crop group tolerance must be revoked. The registration for naled on beans and peas must exclude field peas and cowpeas.

Soybean forage and hay: Valent does not have registered uses of naled on soybeans. However, a REFS search conducted 3/15/94 identifies soybeans as an active use site for naled. RD should require that all registered uses of naled on soybeans be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on soybeans, then residue data reflecting the maximum registered use patterns are required and appropriate tolerances for soybean forage and hay must be proposed.

Fruiting Vegetables Group

Eggplant: Valent has applied for the reinstatement of eggplant as a site on one of its end-use products (EPA Reg. No. 59639-15) and has requested that the available data for tomatoes be translated to eggplant. CBRS concluded that eggplant may be reinstated on the label. The available data support 3 foliar applications of the EC formulation on tomatoes translatable to eggplant at 2.0 lb ai/A (1.1x the maximum seasonal rate) with a 1-day PHI.

Peppers: Valent has applied for the reinstatement of peppers as a site on one of its end-use products (EPA Reg. No. 59639-15) and has requested that the available data for peppers as well as data from tomatoes be considered. CBRs concluded that peppers may be reinstated on the label. The available data support a maximum of 3 foliar applications of the EC formulation at a minimum 7-day interval between applications of up to 1.8 lb ai/A/application (1x the maximum seasonal rate) with a 1-day PHI.

Tomatoes: Naled is presently not registered by Valent for use on tomatoes. However, a REFS search conducted 3/15/94 identifies tomatoes as an active use site for naled. RD should require that all registered uses of naled on tomatoes be canceled and the established tomato tolerance be revoked. Alternatively, if registrants other than Valent intend to support the use of naled on tomatoes, then residue data reflecting the maximum registered use patterns are required.

Cucurbit Vegetables Group

Cucumbers: Naled is presently not registered by Valent for use on cucumbers. However, a REFS search conducted 3/15/94 identifies cucumbers as an active use site for naled. RD should require that all registered uses of naled on cucumbers be canceled and the established cucumber tolerance be revoked. Alternatively, if registrants other than Valent intend to support the use of naled on cucumbers, then residue data reflecting the maximum registered use patterns are required.

Melons: Valent has applied for the reinstatement of melons as a site on one of its end-use products (EPA Reg. No. 59639-15). CBRs concluded that melons may be reinstated provided that label use is restricted to a single foliar application at 1.8 lb ai/A with a 1-day PHI.

Pumpkins: Naled is presently not registered by Valent for use on pumpkins; it is, however, an active use site according to a REFS search conducted 3/15/94. Valent has requested the reinstatement of pumpkins as a site on one of its end-use products (EPA Reg. No. 59639-15). Valent further requested that the field residue data for squash be translated to pumpkins. CBRs previously concluded that residue data are needed for winter squash or cucumbers before use on pumpkins can be reinstated.

Squash, summer: Valent has applied for the reinstatement of summer squash as a site on one of its end-use products (EPA Reg. No. 59639-15) and requested that the field residue data for cucumbers be translated to summer squash. CBRs concluded that summer squash may be reinstated provided that aerial application is limited to a minimum spray volume of 2 gal/A (see PR Notice 93-2 dated 2/11/93). An examination of the registrant's product labels indicates that the registrant has complied with the requirements of PR Notice 93-2. No additional summer squash data are needed.

Squash, winter: Naled is presently not registered by Valent for use on winter squash. Valent has requested the reinstatement of winter squash as a site on one of its end-use products (EPA Reg. No. 59639-15). CBRs previously evaluated the available residue data for winter squash

as well as data for cucumbers for purposes of translation. CBRs recommended against reinstating winter squash use until adequate cucumber or winter squash data are submitted.

Citrus Fruits Group

The combined residues of naled and dichlorvos (expressed as naled) in/on treated mature fruits of grapefruit, lemons, and oranges were <0.02-0.19 ppm from tests using ground equipment and up to 2.2 ppm in/on samples from tests using aerial equipment; all samples were harvested 1 day following the final of 3-4 foliar applications of the EC formulation at 1.8 lb ai/A/application (1x the maximum single application rate). The available data support the individual tolerances of 3.0 ppm for the combined residues of residues of naled and dichlorvos in/on grapefruit, lemons, oranges, and tangerines. Since the registered uses of naled on these crops are identical, the data suggest that a crop group tolerance of 3.0 ppm for the citrus fruits group is appropriate. The registrant should propose a crop group tolerance for the citrus fruits group.

Stone Fruits Group

Peaches: The combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.1 ppm) in/on peaches harvested 31 days following a single foliar application of the EC formulation using ground equipment at 4.0 lb ai/A (1.1x the maximum rate). Provided that a label revision is made to specify a 31-day PHI, the available data support the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on peaches.

Small Fruits and Berries Group

Grapes: The combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.02 ppm) in/on mature grapes harvested 3 days following the final of 6 foliar applications of the EC and D formulations using ground and aerial equipment at 2.0 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on grapes may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.

Strawberries: The Naled Update Residue Chemistry Chapter required additional field residue data reflecting aerial application of a representative EC formulation. Adequate data reflecting ground application of a representative EC formulation are available. These data indicate that the combined residues of naled and dichlorvos (expressed as naled) were 0.24-1.1 ppm in/on mature strawberries harvested 0-1 day following the final of 5 foliar applications of the EC formulation at 0.9 lb ai/A/application (1x the maximum single application rate). An examination of the registrant's product labels indicates that the registrant has complied with the requirements of PR Notice 93-2. The available data support the established 1.0 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on strawberries. No additional strawberry data are required.

Tree Nuts Group

Almonds: The combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.02 ppm) in/on almond nutmeat harvested 14 days following the last of one dormant application at 6.0 lb ai/A (1.7x the maximum single application rate) and 3 foliar applications at 3.0 (0.8x), 3.0 (0.8x), and 6.0 lb (1.7x) ai/A of the EC formulation using ground equipment; in the same tests, the combined residues in hulls were ≤0.51 ppm at 28 days after the final treatment. The available data support the established 0.5 ppm tolerances for the combined residues of residues of naled and dichlorvos in/on almond nutmeat and hulls.

Walnuts: The combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.02 ppm) in/on walnuts harvested 10 days following a single full-coverage, foliar application of the EC formulation using ground equipment at 4.0 lb ai/A (2.2x the maximum single application rate). The Residue Chemistry Science Chapter to the Naled Reregistration Standard concluded that because translocation of naled residues is minimal, residues in/on walnut nutmeat are not expected to exceed the established tolerance of 0.5 ppm regardless of the number of applications.

Cereal Grains Group

Rice: Naled is presently not registered by Valent for use on rice. However, a REFS search conducted 3/15/94 identifies rice as an active use site for naled. RD should require that all registered uses of naled on rice be canceled and the established rice tolerance be revoked. Alternatively, if registrants other than Valent intend to support the use of naled on rice, then residue data reflecting the maximum registered use patterns are required.

Forage, Fodder, and Straw of Cereal Grains Group

Rice straw: Naled is presently not registered by Valent for use on rice. However, a REFS search conducted 3/15/94 identifies rice as an active use site for naled. RD should require that all registered uses of naled on rice be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on rice, then residue data reflecting the maximum registered use patterns are required and an appropriate tolerance for rice straw must be proposed.

Grass Forage, Fodder, and Hay Group

Grass forage: The combined residues of naled and dichlorvos (expressed as naled) were <0.02(nondetectable)-5.2 ppm in/on representative grass forage samples harvested 1-24 hours and <0.02 ppm (nondetectable) in/on samples harvested 48 hours following the final of 5 foliar applications of the EC formulation at 0.9 lb ai/A/application (1x the maximum single application rate). The available data support the established 10 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on grass forage.

Grass hay: Residue data on grass hay are insufficient. Data reflecting the maximum registered use patterns of the EC and SC/L formulations are required. Both grass forage and grass hay must be analyzed. Grass forage samples must be harvested on the day of application. Grass hay samples must be harvested at the label PHI. Tests must be conducted in regions specified in the Updated Guidance on Number and Location of Domestic Field Trials should be followed. The registrant must propose a tolerance for grass hay.

Non-grass Animal Feeds Group

The sole Valent-registered use of naled on alfalfa is for alfalfa grown for seed under Section 24(c) registrations (OR900020, WA890019, ID900016, and UT940003). The labels for these SLN uses carry specific instructions regarding the manner by which seed screenings should be disposed to prevent distribution for food or feed purposes. Furthermore, the label specifies that no portion of the alfalfa plant, including but not limited to seeds, hay, forage, or stubble, may be used or distributed for food or feed purposes. Additionally, the states of OR, WA, and ID have sufficient regulatory controls in place to preclude the food or feed use of treated alfalfa. The Agency has not received evidence of sufficient regulatory controls in UT. The Agency classifies the registered Section 24(c) use of naled on alfalfa grown for seed to be a non-food use in OR, WA, and ID only. Therefore, no residue data are required to support naled use on alfalfa in OR, WA, and ID. However, tolerance proposals are needed for alfalfa forage and hay, supported by appropriate residue data, to support naled use in UT.

Miscellaneous Commodities

Cottonseed: The available data indicate that the combined residues of naled and dichlorvos (expressed as naled) were <0.02(nondetectable)-0.04 ppm in/on fuzzy cottonseeds harvested 65-106 days following the final of 5 foliar applications of the EC formulation using ground and aerial equipment at 0.9 lb ai/A/application (1x the maximum single application rate). The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on cottonseed may be too high and that a tolerance of 0.05 ppm would be more appropriate; the registrant should propose a new tolerance level.

The livestock feeds table for Subdivision O (6/94) requires data on cotton gin byproducts (commonly called gin trash) which include the plant residues from ginning cotton and consists of burrs, leaves, stems, lint, immature seeds, and sand and/or dirt. A cottonseed processing study contains residue data on ginned cotton lint. The combined residues of naled and dichlorvos (expressed as naled) in/on ginned cottonseed and cotton lint were nondetectable (<0.01 and <0.02 ppm, respectively) following the final of 5 foliar applications of the EC formulation using ground equipment at 1x or 5x. Although data pertaining to all forms of gin trash are not available, CBRS will not require additional data on cotton gin byproducts in consideration of the nondetectable residues obtained in ginned cotton lint following the 5x rate and 4-day PHI used in the study. The registrant should propose a tolerance for cotton gin byproducts.

Hops: Naled is presently not registered by Valent for use on hops. However, Valent is supporting IR-4's effort to reinstate naled use on hops. CBRs previously recommended against reinstating hops use until adequate data are submitted. Adequate residue data have been submitted to support naled use on hops at the proposed of a maximum of five applications of the 7.2 lb/gal EC formulation at 0.9 lb ai/A/application, with applications made using ground or aerial equipment, in a minimum of 10 gal/A using aerial equipment, and a 7 day PHI. A minimum retreatment interval must be proposed, and must be consistent with the submitted data. A 21 day retreatment interval would be supported by the submitted data.

Mushrooms: Naled is presently not registered by Valent for use on mushrooms. However, a REFS search conducted 3/15/94 identifies mushrooms as an active use site for naled. RD should require that all registered uses of naled on mushrooms be canceled and the established mushroom tolerance be revoked. Alternatively, if registrants other than Valent intend to support the use of naled on mushroom, then residue data reflecting the maximum registered use patterns are required.

Safflower: The combined residues of naled and dichlorvos (expressed as naled) were 0.08-0.16 ppm in/on safflower seeds harvested the same day following a single foliar application of the EC formulation using ground equipment at 2.0 lb ai/A (~3x the maximum rate); residues were nondetectable (<0.05 ppm) 3 days later (the established PHI is 30 days). The combined residues in/on safflower seeds were nondetectable (<0.05 ppm) 1 day after the same application was made with aerial instead of ground equipment; residues were nondetectable (<0.05 ppm) 2 days later. The available data support the established 0.5 ppm tolerances for the combined residues of residues of naled and dichlorvos in/on safflower seed. In the absence of data reflecting multiple foliar applications, CBRs will not recommend a tolerance reduction.

Tobacco: Valent is not supporting naled use on tobacco. No data have been submitted in response to the Naled Reregistration Standard Update Residue Chemistry Chapter dated 6/8/90. Data are needed to assess the exposure of humans to the residue remaining at the time of tobacco use. The Update requirement for a residue profile study in tobacco remains outstanding.

Wide Area and General Outdoor Treatments

The combined residues of naled and dichlorvos (expressed as naled) were below the established 0.5-ppm tolerance from use of naled for area pest control in/on representative raw agricultural commodities (listed in 40 CFR §180.34) harvested one hour following one aerial application the EC formulation at 0.25 lb ai/A (~1.1x the maximum registered rate). The submitted data from 17 field trials indicate that measurable residues up to 0.04 ppm naled (cranberries, wheat) and up to 0.27 ppm dichlorvos (mustard greens) occurred. The highest combined residue value, when expressed in terms of naled was 0.46 ppm (mustard greens). The current tolerance expression listed in 40 CFR §180.215 for area pest control covers only

residues of naled *per se* and should be revised to reflect the combined residues of naled and its conversion product dichlorvos.

GLN 171-4 (I): Magnitude of the Residue in Processed Food/Feed

The reregistration requirements for magnitude of the residue in processed food/feed commodities are fulfilled for cottonseed, grapes, oranges, and soybeans. Processing studies involving rice, soybeans, and tomatoes will not be required provided all registered uses of naled on these crops are canceled. It should be noted that because of revisions in the livestock feeds table for Subdivision O, data on cannery waste of beans are no longer required. A summary of the available processing data is presented below.

Cottonseed: An acceptable cottonseed processing study has been submitted. This study indicates that the combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.01 ppm) in meal, hulls, soapstock, crude oil, refined oil, bleached oil, and deodorized oil processed from cottonseed treated foliarly (5 times at 5x the maximum single application rate) and bearing nondetectable (<0.01 ppm) residues. No food/feed additive tolerances are required for the processed commodities of cottonseed.

Grapes: An acceptable grape processing study has been submitted. This study indicates that the combined residues of naled and dichlorvos (expressed as naled) were nondetectable (<0.01 ppm) in juice, wet and dry pomace, raisins, and raisin waste processed from grapes treated foliarly (4 times at 5x the maximum single application rate) and bearing nondetectable (<0.01 ppm) residues. No food/feed additive tolerances are required for the processed commodities of grapes.

Oranges: An acceptable orange processing study has been submitted. This processing study indicates that residues of dichlorvos concentrated in oil 13x during processing of oranges treated with naled. Residues of naled were non-detectable in both unprocessed oranges and all orange processed commodities in the submitted orange processing study. The study also indicates that residues of dichlorvos did not concentrate in the citrus processed commodities wet pulp, dried pulp, molasses, and juice. CBRS previously concluded that for the purposes of establishing food additive tolerances, if appropriate, the combined residues of naled and dichlorvos will be assumed to concentrate 13x during processing of citrus treated with naled. The highest average field trial (HAFT) for naled on oranges is 2.2 ppm. The HAFT, multiplied by the concentration factor of 13x, would result in a residue of about 30 ppm in orange oil. Since citrus oil is not ready to eat and the dilution during food preparation should be greater than the 13x concentration, a maximum residue limit (MRL) of 30 ppm will be set under Section 701 rather than a tolerance under Section 409.

Rice: Naled is presently not registered by Valent for use on rice. However, a REFS search conducted 3/15/94 identifies rice as an active use site for naled. RD should require that all registered uses of naled on rice be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on rice, then a rice processing study is required to

determine the potential for the concentration of the combined residues of naled and dichlorvos in rice processed commodities.

Soybeans: Naled is presently not registered by Valent for use on soybeans. However, a REFS search conducted 3/15/94 identifies soybeans as an active use site for naled. RD should require that all registered uses of naled on soybeans be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on soybeans, then a soybean processing study is required to determine the potential for the concentration of the combined residues of naled and dichlorvos in soybean processed commodities.

Sugar beets: The combined residues of naled and dichlorvos (expressed as naled) in sugar beet processed commodities (refined sugar, molasses, wet pulp, and dried pulp) are not expected to exceed the reassessed tolerance for sugar beets. Thus, food/feed additive tolerances or additional data are not required for these processed products.

Tomatoes: Naled is presently not registered by Valent for use on tomatoes. However, a REFS search conducted 3/15/94 identifies tomatoes as an active use site for naled. RD should require that all registered uses of naled on tomatoes be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on tomatoes, then a tomato processing study is required to determine the potential for the concentration of the combined residues of naled and dichlorvos in tomato processed commodities.

GLN 171-4 (j): Magnitude of the Residue in Meat, Milk, Poultry, and Eggs

The reregistration requirements for magnitude of the residue in animals are fulfilled. There are presently no registered direct application uses of naled on livestock animals; the only indirect uses of naled on animals involve animal premise treatment. CBRS has reconsidered the available information for naled and has determined that additional animal feeding studies are not required. This decision was based on a goat feeding study wherein the test animals were fed radiolabeled naled at 107 ppm (~20x the expected maximum dietary burden for goats) in 3 equal daily doses and sacrifices on day-4; no naled or dichlorvos residues were detected in goat tissues or milk. In another study, residues were nondetectable (<0.01 ppm) in milk from Holstein cows subjected to body and premise sprays for 14 days at 2 oz ai/2.5 gal (~10x the registered maximum use rate). The registrant has voluntarily canceled the previously registered dermal uses of naled on poultry; consequently a poultry dermal study is no longer required for reregistration.

The established tolerances of 0.05 ppm for the combined residues of naled and dichlorvos (expressed as naled) in the eggs, milk, and tissues of animals are adequate. These tolerances mainly reflect residues resulting from dietary sources. The contribution of the combined residues of naled and dichlorvos to eggs, milk, and meat from the indirect uses of naled in livestock premises is not expected to be significant in relation to the levels which result from dietary sources.

According to the Residue Chemistry Science Chapter to the Naled Reregistration Standard Guidance Document, the calculated maximum dietary burden for poultry and livestock animals were: 10 ppm (horses), 8 ppm (dairy cattle), 5 ppm (beef cattle), 5 ppm (sheep), 0.6 ppm (swine), and 0.1 ppm (poultry). As a result of tolerance reassessment as well as Valent's intent not to support naled uses on rice, soybeans, tomatoes, and turnips which are considered feed commodities, the maximum dietary burdens are expected to be even lower.

GLN 171-5: Reduction of Residues

Data reflecting residue decline studies are available. These data include common practices such as special processing and cooking that could reduce dietary exposure to naled. A summary of naled residue reduction data is presented below.

Celery: The commercial practices of field trimming and water rinsing naled-treated celery reduced naled residues $\approx 75\%$. Residues of dichlorvos were not affected by these practices. The common commercial practices of crown removal, refrigerator storage, and cooking celery reduced both naled and dichlorvos residue levels. Naled residues (0.03 ppm) were reduced to nondetectable levels (<0.01 ppm) after 10 days of refrigeration. dichlorvos residues were reduced $\approx 90\%$ by cooking rinsed samples in boiling water for 30 minutes.

Collards: Dichlorvos residues in/on collards were reduced $\approx 60\%$ by rinsing with water. Residues of naled were too low to determine if rinsing reduced residue levels. Boiling naled treated collards reduced dichlorvos residues from 0.14 ppm to <0.01 ppm. The reduction of naled residues from boiling could not be determined due to low initial residues.

Oranges: After typical commercial and consumer practices of rinsing with water, waxing, and peeling, residues of naled (0.04 ppm) and dichlorvos (0.05 ppm) were reduced to nondetectable levels (<0.01 ppm) in fresh-market citrus commodities.

Strawberries: A reduction in naled and dichlorvos residues in/on strawberries was observed during pre-cooling and transport of the samples to the laboratory. Dichlorvos residues in/on fresh market strawberries decreased $\approx 45\%$, while naled residues decreased $\approx 18\%$. Data concerning reduction in residues due to rinsing and washing strawberries were not submitted.

GLN 165-1 and 165-2: Confined/Field Rotational Crops

Confined rotational studies (GLN 165-1) have been reviewed and deemed adequate by the Environmental Fate and Effects Division. The confined rotational crop study indicated that the total radioactive residues (expressed as naled equivalents) resulting from treatment at 2 lb ai/A were ≤ 0.03 ppm in/on mature lettuce (tops and roots), wheat (grain, bran, and straw), and carrots (tops) and roots) harvested at 30-day plantback interval from pots of loam soil that had been surface-treated with [ethyl 1- ^{14}C]naled at a nominal application rate of 2 lb ai/A. The rapid degradation of naled and dichlorvos and the fact these materials can be readily metabolized to CO_2 indicate that there is not a large potential for naled residues to accumulate in rotational crops in soil treated with naled. Limited or extensive field rotational crop studies

(GLN 165-2) are not required. Furthermore, rotational crop tolerances and plantback interval restrictions are not needed.



Table A. Registered Food/Feed Uses of Naled for Valent U.S.A. Corporation.

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|----------------------------------|---|---|---|--------------------------|---|--|--|
| Crop Uses | | | | | | | |
| Alfalfa (grown for seed) | | | | | | | |
| | Broadcast spray application Foliar Ground or aerial equipment | 7.2 lb/gal EC [OR900020] [WA890019] [ID900016] [UT940003] | 0.9 lb/A | Not Specified (NS) | 7 | NS | Non-food use limited to OR, WA, & ID. Food use in UT. The use of any portion of the treated field, including seed, seed screenings, hay, forage, or stubble, for human food or animal feed; use on fields producing alfalfa for livestock feed; feeding or grazing treated alfalfa; cutting of treated alfalfa for hay or for forage; and use of seed for sprouting is prohibited. Regulatory mechanism is in place in ID, WA, and OR to enforce these limitations, but not in UT. Therefore, use is considered food use in UT. |
| Almonds | | | | | | | |
| | Spray application Dormant/delayed dormant Ground equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/100 gal or 3.6 lb/A | 1 | Not Applicable (NA) | 24 | Tank mix use with supreme type oil or dormant oil. |
| Beans (dry and succulent) | | | | | | | |
| | Spray applications Foliar Ground equipment | 7.2 lb/gal EC [59639-15] | 1.35 lb/A | NS | NS | 24 | A 1-day PHI has been established. Feeding of treated vines is prohibited. |

(continued; footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|--|---|-------------------------------|---|-----------------|---|--|---|
| Beans (dry and succulent) (continued) | | | | | | | |
| | Spray applications Foliar Aerial equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | 7 | 24 | Use limited to CA. Applications may be made in 10 gal/A by air. A 1-day PHI has been established. Feeding of treated vines is prohibited. |
| Broccoli | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | A 1-day PHI has been established. |
| Brussels sprouts | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | See "Broccoli." |
| Cabbage | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | See "Broccoli." |
| Cauliflower | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | See "Broccoli." |

(continued, footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|-----------------|---|-------------------------------|---|-----------------|---|--|--|
| Celery | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.35 lb/A | NS | NS | 24 | A 1-day PHI has been established. Applications may be made in 10 gal/A by air. |
| Collards | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | See "Broccoli." |
| Cotton | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | 7-10 | 24 | Applications may be made in 20-100 gal/A by ground and in 5-15 gal/A by air (EPA Reg. No. 59639-72) or in 3- 20 gal/A by ground and in 3-10 gal/A by air (EPA Reg. No. 59639-15). Application after first bolls open and the grazing of livestock in treated fields are prohibited. |
| Eggplant | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | 7 | 24 | Applications may be made in 20 gal/A by ground and in 10 gal/A by air. A maximum seasonal rate of 5.4 lb ai/A is in effect. A 1-day PHI has been established. |

(continued; footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|-------------------|---|-------------------------------|---|-----------------|---|--|---|
| Grapefruit | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | 4 | NS | 24 | Applications may be made in 10 gal/A by air. A 7-day PHI has been established. |
| Grapes | | | | | | | |
| | Spray applications Foliar Ground equipment | 7.2 lb/gal EC [59639-15] | 0.6 lb/100 gal or 0.78 lb/A | NS | NS | 24 | A 1-day PHI has been established (EPA Reg. No. 59639-72) and a 10- day PHI has been established (EPA Reg. No. 59639-15). |
| | Spray applications Prebloom/postbloom Airblast equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | NS | 24 | Use limited to CA. Applications may be made in 20-30 gal/A by ground. A 10-day PHI has been established (EPA Reg. No. 59639-15). |

(continued. footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|---------------------------------|--|-------------------------------|---|-----------------|---|--|--|
| Grasses (pasture and rangeland) | | | | | | | |
| | Spray applications to control crop pests Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | NS | 24 | Applications may be made in 1-5 gal/A by air. Animals may be present during foliar applications. Grazing of lactating dairy cattle on treated areas is prohibited. |
| | Spray applications to control pests of humans and animals Aerial equipment or thermal or non-thermal (mist blower) fog. generators | 3.6 lb/gal EC [59639-18] | 0.225 lb/A | NS | NS | 24 | A 4-day PHI has been established for crop areas (EPA Reg. No. 59639-18). |
| | | 7.2 lb/gal EC [59639-15] | 0.4 lb/A (undiluted) or 0.2 lb/A (diluted) | NS | NS | NS | Applications may be made undiluted as a ULV spray or diluted with No. 2 fuel oil, diesel oil, HAN, or soybean oil as a ULV spray or thermal fog. |
| Kale | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | See "Broccoli." |
| Lemon | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | 4 | NS | 24 | See "Grapefruit." |

(continued; footnotes follow)

(34)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|---|--|-------------------------------|---|-----------------|---|--|---|
| Lettuce | | | | | | | |
| | Spray applications Foliar Ground equipment | 7.2 lb/gal EC [FL890008] | 0.5 lb ai/A | NS | 1 | NS | Applications may be made in 3-5 gal spray mixture/A by air. Limit of 1 application per day. A 1-day PHI has been established. |
| Melons (Including cantaloupe, honeydew, muskmelon, and watermelon) | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | 7 | 24 | Applications may be made in 30 gal/A by ground and in 10 gal/A by air. A maximum seasonal rate of 1.8 lb ai/A is in effect. A 1-day PHI has been established. |
| Oranges | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | 4 | NS | 24 | See "Grapefruit." |
| Peaches | | | | | | | |
| | Spray application Dormant/delayed dormant Ground equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/100 gal or 3.6 lb/A | 1 | NA | 24 | Tank mix use with supreme type oil or dormant oil. |
| Peppers | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | 7 | 24 | See "Eggplant." |

(continued, footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|-----------------------|---|-------------------------------|---|-----------------|---|--|--|
| Safflower | | | | | | | |
| | Spray application Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.675 lb/A | NS | NS | 24 | Use limited to AZ and CA. Applications may be made in 3-10 gal/A by air. A 30-day PHI has been established. |
| Squash, summer | | | | | | | |
| | Spray application Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | 7 | 24 | Applications may be made in 20 gal by ground or in 10 gal/A by air. A maximum seasonal rate of 5.4 lb ai/A is in effect. A 1-day PHI has been established. |
| Strawberries | | | | | | | |
| | Spray application Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | NS | 24 | Applications may be made in 125-300 gal by ground or in 10-20 gal/A by air (EPA Reg. No. 59639-72). A 1- day PHI has been established. |
| Sugar beets | | | | | | | |
| | Spray application Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/A | NS | NS | 24 | Applications may be made in 1-5 gal/A by air. A 2-day PHI has been established. |
| Tangerines | | | | | | | |
| | Spray applications Foliar Ground or aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | 4 | NS | 24 | See "Grapefruit." |

(continued, footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation (EPA Reg. No.) | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|--|---|-------------------------------|---|-----------------|---|--|---|
| Walnuts | | | | | | | |
| | Spray applications Foliar Ground equipment | 7.2 lb/gal EC [59639-15] | 0.9 lb/100 gal | NS | NS | 24 | A 10-day PHI has been established. Grazing of livestock in treated groves is prohibited. |
| | Spray applications Foliar Aerial equipment | 7.2 lb/gal EC [59639-15] | 1.8 lb/A | NS | NS | 24 | Use limited to CA. Applications may be made in 10-20 gal/A by air. A 10-day PHI has been established. Grazing of livestock in treated groves is prohibited. |
| Wide Area and General Outdoor Treatments | | | | | | | |
| Raw agricultural commodities (mosquito abatement and fly control) | | | | | | | |
| | Spray applications to control pests of humans and animals Cold fog generator, mist blower, or aerial equipment | 7.2 lb/gal EC [59639-15] | 0.225 lb/A | NS | NS | 24 | No PHI has been established. |
| | Spray application for adult mosquito abatement Aerial equipment | 7.2 lb/gal EC [MD810023] | 0.054 lb/A | NS | NS | NS | Mix Dibrom 14 Concentrate with heavy aromatic naphtha (HAN) solvent at 1 fl oz Dibrom 14 in 5 fl oz HAN. Use 1.5 to 3 fl oz/A. Use greater volume to penetrate heavier vegetation. No PHI has been established. |
| Animal Uses | | | | | | | |
| Dairy barns premise treatment | | | | | | | |
| | Fog treatment | 1% RTU [59639-21] | 0.01 oz/3,000 cu. ft | NS | NS | NS | Cows may be present during fogging operations. |

(continued, footnotes follow)

Table A (continued).

| Site | Application Type Application Timing Application Equipment | Formulation [EPA Reg. No.] | Max. Single Application Rate (ai) | Max. # Apps. | Min. Retreatment Interval (Days) | Restricted Entry Interval (Hours) | Use Limitations |
|--|---|-----------------------------------|---|-----------------|---|--|---|
| Dairy barns, livestock barns, pig pens, poultry houses, feed lots, and cattle pens premise treatments | | | | | | | |
| | Space spray application Ground equipment | 3.6 lb/gal EC [59639-18] | 0.9 lb/40 gal (EC)* | NS | NS | NS | |
| | | 1% RTU [59639-21] | no rate listed for RTU | | | | |
| Feed lots, holding pens, or corral premise treatment | | | | | | | |
| | Space spray application Ground or aerial equipment | 7.2 lb/gal EC [59636-15] | 0.225 lb/A | NS | NS | 24 | |
| Feed lots | | | | | | | |
| | Spray applications to control pests of humans and animals Thermal fog generator | 12.6 lb/gal SC/L [59639-19] | 12.6 lb/99 gal | NS | NS | NS | Use diluted with No. 2 fuel oil or diesel oil. |
| | Spray applications to control pests of human and animals Aerial equipment | 12.6 lb/gal SC/L [59639-19] | 0.4 lb/A (undiluted) or 0.2 lb/A (diluted with No. 2 fuel oil or diesel oil) | NS | NS | NS | |
| | Spray applications to control pests of humans and animals Aerial equipment or mist blower | 3.6 lb/gal EC [59639-18] | 0.25 lb/A | NS | NS | NS | |

No maximum rate given.

(continued; footnotes follow)

Table B. Residue Chemistry Science Assessments for the Reregistration of Naled.

| GLN: Data Requirements | Tolerances, ppm [40 CFR] | Must Additional Data Be Submitted? | References ¹ |
|--|-----------------------------|---------------------------------------|---|
| 171-3: Directions for Use | N/A = Not Applicable | Yes ² | See Table A. |
| 171-4 (a): Plant Metabolism | N/A | No | 00074647, 00074654, 00074836, GS092090, 00154126 ³ |
| 171-4 (b): Animal Metabolism | N/A | No ⁴ | 00059386, 00074844, GS092091, GS092092, 00126462 ^{3,5} , 00126463 ⁵ |
| 171-4 (c/d): Residue Analytical Methods | N/A | Yes ⁶ | 00073820, 00073821, 00074647, 00074721, 00074725, 00074806, GS092026, 00160765 ⁶ , 40506401 ⁷ , 43189602 ⁸ |
| 171-4 (e): Storage Stability | N/A | Yes ⁹ | 00160765 ⁶ , 43223908 ⁹ , 43223909 ⁹ |
| 171-4 (k): Magnitude of the Residue in Plants | | | |
| <u>Root and Tuber Vegetables Group</u> | | | |
| - Sugar beet roots | 0.5 [180.215] | No ¹⁰ | 00073815, 00073819, 00073821, 00074836 |
| - Turnip roots | None Established | Yes ¹¹ | |
| <u>Leaves of Root and Tuber Vegetables Group</u> | | | |
| - Sugar beet tops | 0.5 [180.215] | No | 00073815, 00073819, 00073821, 00074836 |
| - Turnip tops | 3.0 [180.215] | Yes ¹¹ | 00073820 |
| <u>Leafy Vegetables Group (except Brassica Vegetables)</u> | | | |
| - Celery | 3.0 [180.215] | No ¹² | 00073821, 00074722, 00074836, 00160765 |
| - Lettuce | 1.0 [180.215] | Yes ¹³ | 00073820, 00074807 |

Table B (continued).

| GLN: Data Requirements | Tolerances, ppm [40 CFR] | Must Additional Data Be Submitted? | References ¹ |
|--|---------------------------------|---------------------------------------|--|
| - Spinach | 3.0 [180.215] | No ¹⁴ | 00073820, 00074722, 43223910 ¹⁴ |
| - Swiss Chard | 3.0 [180.215] | No ¹⁵ | 00074836 |
| <u>Brassica (Cole) Leafy Vegetables Group</u> | | | |
| - Broccoli | 1.0 [180.215] | No ¹⁶ | 00073820, 00074836, 00160765 |
| - Brussels Sprouts | 1.0 [180.215] | No ¹⁷ | |
| - Cabbage | 1.0 [180.215] | Yes ¹⁸ | 00074836, 00160765 |
| - Cauliflower | 1.0 [180.215] | Yes ¹⁹ | 00073820, 00160765 |
| - Collards | 3.0 [180.215] | Yes ²⁰ | 00073821, 00160765 |
| - Kale | 3.0 [180.215] | No ²¹ | 00073821 |
| <u>Legume Vegetables (Dry or Succulent) Group</u> | | | |
| - Beans | 0.5 [180.215] | No ²² | 00073820, 00073821, 00073846, 00074699, 00074729, 00074836, 00160765 ⁶ |
| - Peas | 0.5 [180.215] | No ²³ | 00073846, 00160765 ⁶ |
| - Soybeans | None Established | Yes ²⁴ | 00073821, 00073846 |
| <u>Foliage of Legume Vegetables Group</u> | | | |
| | 10.0 [180.215] ²⁵ | | |
| - Bean vines and hay | None Established | No ²⁵ | 00073820, 00073821, 00073846, 00074699, 00074729, 00074836, 00160765 ⁶ |
| - Pea vines and hay | None Established | Yes ²⁵ | 00073846, 00160765 ⁶ |
| - Soybean forage and hay | None Established | Yes ²⁴ | 00073821, 00073846 |

39

Table B (continued).

| GLN: Data Requirements | Tolerances, ppm [40 CFR] | Must Additional Data Be Submitted? | References ¹ |
|---------------------------------------|-----------------------------|---------------------------------------|--|
| <u>Fruiting Vegetables Group</u> | | | |
| - Eggplant | 0.5 [180.215] | No | 00073820, 00074836, 00075668 |
| - Peppers | 0.5 [180.215] | No | 00073820, 00074836 |
| - Tomatoes | 0.5 [180.215] | Yes ²⁶ | 00073820, 00074836, 00075668 |
| <u>Cucurbit Vegetables Group</u> | | | |
| - Cucumbers | 0.5 [180.215] | Yes ²⁷ | 00073820, 00075668 |
| - Melons | 0.5 [180.215] | No ²⁸ | 00073820 |
| - Pumpkins | 0.5 [180.215] | Yes ²⁹ | |
| - Squash, summer | 0.5 [180.215] | No | 00073820 |
| - Squash, winter | 0.5 [180.215] | Yes ³⁰ | |
| <u>Citrus Fruits Group</u> | | | |
| - Grapefruit | 3.0 [180.215] | No ³¹ | 00160765 ⁶ , 40376601 ⁶ |
| - Lemons | 3.0 [180.215] | No ³¹ | 00073820, 00160765 ⁶ , 40376601 ⁶ |
| - Oranges | 3.0 [180.215] | No ³¹ | 00073820, 00074807, 00160765 ⁶ , 40376601 ⁶ |
| - Tangerines | 3.0 [180.215] | No ³¹ | 00160765 ⁶ , 40376601 ⁶ |
| <u>Stone Fruits Group</u> | | | |
| - Peaches | 0.5 [180.215] | No ³² | 00074836, 00073821 |
| <u>Small Fruits and Berries Group</u> | | | |
| - Grapes | 0.5 [180.215] | No ³³ | 00073817, 00073821, 00074728, 00074836, 00160765 |
| - Strawberries | 1.0 [180.215] | No | 00073820, 00160765 |

Table B (continued).

| GLN: Data Requirements | Tolerances, ppm [40 CFR] | Must Additional Data Be Submitted? | References ¹ |
|---|--|---------------------------------------|---|
| <u>Tree Nuts Group</u> | | | |
| - Almonds | 0.5, almond hulls and nuts [180.215] | No | 00073830 |
| - Walnuts | 0.5 [180.215] | No | 00073821 |
| <u>Cereal Grains Group</u> | | | |
| - Rice | 0.5 [180.215] | Yes ³⁴ | 00074723, 00073820 |
| <u>Forage, Fodder, and Straw of Cereal Grains Group</u> | | | |
| - Rice forage and straw | None Established | Yes ³⁷ | 00074723, 00073820 |
| <u>Grass Forage, Fodder, and Hay Group</u> | | | |
| - Grass forage and hay (pasture and range) | 10.0 for grass forage [180.215] | Yes ³⁵ | 00073816, 00160765, 43536701 ³⁵ |
| <u>Non-grass Animal Feeds Group</u> | | | |
| - Alfalfa forage and hay | None Established | No ³⁶ | 00073816, 00073818, 00073821, 00074836, 40605201 |
| <u>Miscellaneous Commodities</u> | | | |
| - Cottonseed | 0.5 [180.215] | No ^{37,38} | 00073821, 00074700, 00074845, 00160765 |
| - Hops | 0.5 [180.215] | No ³⁹ | 00073846, 43493101 ³⁹ |
| - Mushrooms | 0.5 [180.215] | Yes ⁴⁰ | GS092093 |
| - Safflower seed | 0.5 [180.215] | No | 00073846, 00074845 |
| - Tobacco | -- | Yes ⁴¹ | |
| <u>Wide Area and General Outdoor Treatments</u> | | | |
| | 0.5 [180.215] | No | 40407301 ⁴² , 40506401 ⁴² , 40633601 ⁴³ |
| 171-4(l): Magnitude of the Residue in Processed Food/Feed | | | |
| - Cottonseed | -- | No | 43189606 ⁴⁴ |

Table B (continued).

| GLN: Data Requirements | Tolerances, ppm [40 CFR] | Must Additional Data Be Submitted? | References ¹ |
|--|---|---------------------------------------|--|
| - Grapes | -- | No | 43189603 ⁴⁴ , 43189604 ⁴⁴ , 43189605 ⁴⁴ |
| - Oranges | -- | No | 42262801 ^{45,46} |
| - Rice | -- | Yes ⁴⁷ | |
| - Safflower | -- | No | 00073846, 00074845 |
| - Soybeans | -- | Yes ⁴⁸ | |
| - Sugar beets | -- | No | 00073815, 00073819, 00073821, 00074836 |
| - Tomatoes | -- | Yes ⁴⁹ | |
| 171-4 (j): Magnitude of the Residue in Meat, Milk, Poultry, and Eggs | | | |
| - Cattle, goats, hogs, horses, and sheep and milk | 0.05 (fat, meat, and mbyp and milk) [180.215] | No ⁵⁰ | GS092026, GS092092, GS092094, GS092095, 00073821 |
| - Poultry and eggs | 0.05 (fat, meat, and mbyp and eggs)[180.215] | No ⁵⁴ | GS092096, 00074692 |
| 171-5: Reduction of Residues | | No | 42529606 ⁵¹ , 42529607 ⁵¹ , 42529608 ⁵¹ , 42529609 ⁵¹ |
| 165-1: Rotational Crops (Confined) | | No | 40034905 ⁵² , 40304301 ⁵² , 41354109 ⁵² , 43065101 ⁵³ |
| 165-2: Rotational Crops (Field) | | Waived | |

1. **Bolded references** were reviewed in the Naled Residue Chemistry Reregistration Standard Update of 6/8/90. **Unbolded references** were reviewed in the Residue Chemistry Science Chapter of the Reregistration Standard dated 7/83. Otherwise, references were reviewed as noted.
2. The registrant is required to specify the maximum number of applications per growing season that may be allowed for each registered crop. The required label revisions must be supported by adequate residue data.
3. CB No. 160, 2/6/86, C. Trichilo.

Table B (continued).

4. The HED's Greybeard Committee waived the requirements for an additional poultry metabolism study reflecting direct dermal treatment because the registrant does not intend to support this use; Valent has subsequently deleted direct dermal treatment of naled on poultry from its product labels.
5. CB No. None, 9/27/84, G. Makhijani.
6. CB No. 1931, 3/30/87, L. Cheng.
7. CB No. None, 1/10/90, E. Haeberer.
8. A revised version of method RM-3G-4 has been reviewed (CB No. 13695, 7/18/94, S. Hummel, DP Barcode D202661); additional revisions to this method are required before it can be forwarded to FDA for inclusion in PAM, Vol. II. Valent has agreed to make the necessary changes.
9. Sufficient storage interval and condition information has been submitted for the following crops: almonds; lemons; beans; lettuce; broccoli; melons; cabbage; milk; cauliflower; oranges; celery; peaches; chicken; peas; collards; peppers; cotton; safflower; cucumbers; spinach; grapefruit; squash; grapes; strawberries; grass; sugar beets; hops; tomatoes; kale; and walnuts. There are no storage stability concerns associated with any of these current studies submitted in support of proposed tolerances. Outstanding field trials and processing studies should be validated by adequate storage stability data. Existing processing studies must also be supported by adequate storage stability data.
10. The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on sugar beet roots may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.
11. Naled is presently not registered by Valent for use turnips. However, a REFS search conducted 3/15/94 identifies turnips as an active use site for naled. RD should require that all registered uses of naled on turnips be canceled. Alternatively, if registrants other than Valent intend to retain the use of naled on turnips, then residue data reflecting the maximum registered use patterns are required for turnip roots and tops; in addition tolerance proposal for turnips roots will be needed.
12. The available data indicate that the established 3.0 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on celery may be too high and that a tolerance of 2 ppm would be more appropriate. The registrant should propose a new tolerance level.
13. Naled is presently not registered by Valent for use on lettuce under Section 3 of FIFRA. However, Valent has a 24(c) registration for naled use on lettuce [FL890008]; and a REFS search conducted 3/15/94 identifies lettuce as an active use site for naled. RD should require that all registered uses of naled on lettuce be canceled and the established lettuce tolerance be revoked. Alternatively, Valent or other registrants intend to retain the use of naled on lettuce, then residue data reflecting the maximum registered use patterns are required.
14. Valent has requested the reinstatement of spinach as a site on one of its end-use products (EPA Reg. No. 59639-15) Acceptable spinach data have been submitted and evaluated (D. Miller, CBRS No. 13996, 9/17/94, and D. Miller, CB No. 14938, 1/31/95). Magnitude of the residue data for spinach have been reviewed and it has been concluded that a tolerance of 3 ppm will be necessary, provided a 2 day PHI is specified.
15. Spinach data will be translated to support the proposed Swiss chard uses.
16. The available data indicate that the established 1.0 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on broccoli may be too high and that a tolerance of 0.1 ppm would be more appropriate, based on existing residue data. The registrant should propose a new tolerance level.

Table B (continued).

17. The available field residue data for broccoli will, by translation, be used to fulfill the data requirements for Brussels sprouts.
18. Additional cabbage residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remain outstanding. Tests must be conducted in states specified in the Naled Update. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.
19. Additional cauliflower residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remain outstanding. Tests must be conducted in states specified in the Naled Update. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.
20. The requirement for additional collards residue data reflecting the maximum registered use patterns of a representative naled EC formulation using either ground or aerial equipment remains outstanding. Tests must be conducted in states specified in the Naled Update. If tests have not yet been initiated, the Updated Guidance on Number and Location of Domestic Field Trials should be followed.
21. The requested field residue data for collards will, by translation, be used to fulfill the data requirements for kale.
22. The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on beans (dry and succulent) may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.
23. The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on peas (succulent) may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.
24. Naled is presently not registered by Valent for use on soybeans. However, a REFS search conducted 3/15/94 identifies soybeans as an active use site for naled. RD should require that all registered uses of naled on soybeans be canceled. Alternatively, if registrants other than Valent intend to retain the use of naled on soybeans, then residue data reflecting the maximum registered use patterns are required and appropriate tolerances for soybeans, soybean forage, and soybean hay must be proposed.
25. The established crop group tolerance for "legumes, forage" is not supported by adequate residue data. This crop group tolerance must be revoked, because use on soybeans is not being supported by Valent. Individual tolerances for cowpeas, hay; and peas, field, hay may be established if supporting residue data for the hays are provided. Field trial data are available for bean and pea vines. If field trial data are not provided for cowpeas, hay; and peas, field, hay; all naled labels for beans and peas restrict use to beans and peas for human consumption only.
26. Naled is presently not registered by Valent for use on tomatoes. However, a REFS search conducted 3/15/94 identifies tomatoes as an active use site for naled. RD should require that all registered uses of naled on tomatoes be canceled and the established tomato tolerance be revoked. Alternatively, if registrants other than Valent intend to retain the use of naled on tomatoes, then residue data reflecting the maximum registered use patterns are required.
27. Naled is presently not registered by Valent for use on cucumbers. However, a REFS search conducted 3/15/94 identifies cucumbers as an active use site for naled. RD should require that all registered uses of naled on cucumbers be canceled and the established cucumber tolerance be revoked. Alternatively, if registrants other than Valent intend to retain the use of naled on cucumbers, then residue data reflecting the maximum registered use patterns are required.

Table B (continued).

28. No additional data are required. However, the registrant must revise its product label for the 7.2 lb/gal EC formulation (EPA Reg. No. 59639-15) to specify a single foliar application at 1.8 lb ai/A with a 1-day PHI (or comparable maximum seasonal use rate); these are the use patterns which are supported by field residue data.
29. The required residue data for winter squash will be translated to pumpkins if use on pumpkins is requested.
30. Additional data reflecting use of the EC formulation are required before naled use on winter squash can be reinstated.
31. The available data support the individual tolerances for the combined residues of residues of naled and dichlorvos in/on grapefruit, lemons, and oranges. Since the registered uses of naled on these crops are identical, the data suggest that a crop group tolerance of 3.0 ppm for the citrus fruits group is appropriate. The registrant should propose a crop group tolerance for the citrus fruits group.
32. No additional data are required. However, the registrant must revise its product label for the 7.2 lb/gal EC formulation (EPA Reg. No. 59639-15) to specify a 31-day PHI for peaches.
33. The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on grapes may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.
34. Naled is presently not registered by Valent for use on rice. However, a REFS search conducted 3/15/94 identifies rice as an active use site for naled. RD should require that all registered uses of naled on rice be canceled and the established rice tolerance be revoked. Alternatively, if registrants other than Valent intend to retain the use of naled on rice, then residue data reflecting the maximum registered use patterns are required for rice grain and straw; in addition tolerance proposal for rice straw will be needed.
35. Residue data on grass forage were considered adequate in the Naled Residue Chemistry Update. Additional residue data for grass hay were required. The submitted residue data the naled EC formulation on grass hay are inadequate because geographic representation was inadequate, no data were provided for the 0 day PHI, no data were submitted for ULV applications or the SC/L formulation diluted in oil, and no data were provided for the aerial application in 1 gal spray mixture/acre (CB 15497, D214903, MRID 43536701, S. Hummel, 04/02/96). Data reflecting the maximum registered use patterns of the EC and SL/C formulations are required. Both grass forage and grass hay should be tested. Tests must be conducted in regions specified in the Updated Guidance on Number and Location of Domestic Field Trials should be followed. The registrant must propose a tolerance for grass hay once adequate data have been submitted and evaluated. A maximum seasonal application rate, consistent with the submitted data must be placed on the product labels.
36. The Agency classifies the registered Section 24(c) use of naled on alfalfa grown for seed in OR, WA, and ID to be a non-food use because of adequate Oregon, Washington, and Idaho State regulatory controls. Therefore, no residue data are required and no tolerance proposals are needed for alfalfa forage or hay in those states. However, the Agency has not received evidence of adequate UT State Regulatory Controls. Use of naled on alfalfa in UT is a food use requiring tolerances and supporting residue data.
37. The available data indicate that the established 0.5 ppm tolerance for the combined residues of residues of naled and dichlorvos in/on cottonseed may be too high and that a tolerance of 0.05 ppm would be more appropriate. The registrant should propose a new tolerance level.
38. Although data pertaining to all forms of gin trash are not available, CBRS will not require additional data on cotton gin byproducts in consideration of the nondetectable residues obtained in ginned cotton lint following a 5x rate and 4-day PHI used in an acceptable field study. The registrant should propose a tolerance for cotton gin byproduct.

Table B (continued).

39. Naled is presently not registered by Valent for use on hops. However, Valent is supporting IR-4's effort to reinstate naled use on hops. CBRS previously recommended against reinstating naled use on hops until adequate data are submitted. Adequate residue data have been submitted to support naled use on hops at the proposed of a maximum of five applications of the 7.2 lb/gal EC formulation at 0.9 lb ai/A/application, with applications made using ground or aerial equipment, in a minimum of 10 gal/A using aerial equipment, and a 7 day PHI. A minimum retreatment interval must be proposed, and must be consistent with the submitted data. A 21 day retreatment interval would be supported by the submitted data. (CB 15213, DP Barcode D212676, MRID 43493101, S. Hummel, 04/02/96).
40. Naled is presently not registered by Valent for use on mushrooms. However, a REFS search conducted 3/15/94 identifies mushrooms as an active use site for naled. RD should require that all registered uses of naled on mushrooms be canceled and the established mushroom tolerance be revoked. Alternatively, if registrants other than Valent intend to support the use of naled on mushroom, then residue data reflecting the maximum registered use patterns are required.
41. Naled use on tobacco is not being supported by Valent. No data have been submitted in response to the Naled Reregistration Standard Update Residue Chemistry Chapter dated 6/8/90. If use on tobacco is to continue, data are needed to assess the exposure of man to the residue remaining at the time of tobacco use. The Update requirement for a residue profile study in tobacco remains outstanding.
42. CB Nos. 3397-3399, 4/5/88, D. Edwards.
43. CB No. 4009, 9/7/89, F. Suhre.
44. CBRS No. 13695, DP Barcode D202661; 7/18/94, S. Hummel. No concentration was reported in cottonseed processed products.
45. CBRS No. 10426, DP Barcode D181565, 11/18/92, J. Abbotts.
46. CBRS No. 11759, DP Barcode D190566, 5/12/93, D. McNeilly.
47. Naled is presently not registered by Valent for use on rice. However, a REFS search conducted 3/15/94 identifies rice as an active use site for naled. RD should require that all registered uses of naled on rice be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on rice, then a rice processing study is required to determine the potential for the concentration of the combined residues of naled and dichlorvos in rice processed commodities.
48. Naled is presently not registered by Valent for use on soybeans. However, a REFS search conducted 3/15/94 identifies soybeans as an active use site for naled. RD should require that all registered uses of naled on soybeans be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on soybeans, then a soybean processing study is required to determine the potential for the concentration of the combined residues of naled and dichlorvos in soybean processed commodities.
49. Naled is presently not registered by Valent for use on tomatoes. However, a REFS search conducted 3/15/94 identifies tomatoes as an active use site for naled. RD should require that all registered uses of naled on tomatoes be canceled. Alternatively, if registrants other than Valent intend to support the use of naled on tomatoes, then a tomato processing study is required to determine the potential for the concentration of the combined residues of naled and dichlorvos in tomato processed commodities.
50. CBRS has reconsidered the available information for naled and determined that additional animal feeding studies are not required (CBRS No. None, DP Barcode None, 9/9/93, M. Metzger).

Table B (continued).

- 51. CB No. 10979, DP Barcode D184519, 4/14/93, D. McNeilly.
- 52. Reviewed by Environmental Fate and Effects Division.
- 53. A snap bean processing study, originally required because of bean and pea feeding restrictions is useful as a reduction of residue study. (CB 13380, DP Barcode D200487, 8/15/94, S. Hummel).

TOLERANCE REASSESSMENT SUMMARY

Tolerances Listed Under 40 CFR §180.215

The tolerances listed in 40 CFR §180.215 are for the residues of naled and its conversion product dichlorvos (2,2-dichlorovinyl dimethyl phosphate), expressed as naled. A summary of naled tolerance reassessments is presented in Table C.

Sufficient data are available to ascertain the adequacy of the established tolerances listed in 40 CFR §180.215 for the following commodities: almonds, hulls; almonds, nutmeat; beans, dry; beans, succulent; broccoli; Brussels sprouts; celery; cottonseed; eggplant; grapefruit; grapes; grass forage; hops; lemons; melons; oranges; peaches; peas, succulent; peppers; spinach (and chard); squash, summer; strawberries; sugar beet roots; sugar beet tops; tangerines; and walnuts. Sufficient data are also available to support the established tolerances for eggs, milk, and tissues of animals resulting from dietary sources or through exposure via animal premise treatment.

The available data indicate that the established tolerances for the following commodities are too high and that the tolerance levels may be reduced: beans, dry; beans, succulent; beets, sugar, roots; broccoli; Brussels sprouts; celery; cottonseed; grapes; and peas, succulent.

Additional field residue data are required for the following commodities before a complete tolerance reassessment can be made: cabbage; cauliflower; collards; mushrooms; and squash, winter. The required data for collards will be translated to kale. The required data for winter squash will be translated to pumpkins.

The established tolerances on cucumbers, lettuce, mushrooms, rice, tomatoes, and turnip tops should be revoked since Valent does not have registered uses of naled on these commodities and it is unlikely that other registrant will support these uses. If registrants other than Valent intend to retain the use of naled on these commodities, then residue data reflecting the maximum registered use patterns are required.

The established 10-ppm crop group tolerance for "legumes, forage" is inappropriate because Valent does not intend to support naled uses on soybeans which is the third representative crop of the foliage of legume vegetables group. Therefore, this crop group tolerance should be revoked. Individual tolerances for cowpeas, forage; cowpeas, hay; peas, field, vines; and peas, field, hay can be established if supporting field trial data are submitted.

The available data for grapefruit, lemons, and oranges suggest that a crop group tolerance of 3.0 ppm for the citrus fruits group is appropriate. The individual tolerances for grapefruit, lemons, oranges, and tangerines should be revoked concomitant with the establishment of a crop group tolerance for citrus fruits.

The Agency classifies the registered Section 24(c) use of naled on alfalfa grown for seed to be a non-food use in OR, WA, and ID, because of adequate Oregon, Washington, and Idaho

State regulatory controls. However, the Agency has no evidence of adequate Utah State Regulatory Controls. Therefore, residue data are required and tolerance proposals are needed for alfalfa forage and hay.

The established 0.5-ppm tolerance from use of naled for area pest control is adequate. The current tolerance for area pest control should be revised to include residues of dichlorvos as follows:

" A tolerance of 0.5 part per million is established for the pesticide naled and its conversion product 2,2-dichlorovinyl dimethyl phosphate, expressed as naled equivalents, in or on all raw agricultural commodities, except those otherwise listed in this section, from use of the pesticide for area pest (mosquito and fly) control."

Tolerances That Need To Be Proposed Under 40 CFR §180.215

The livestock feeds table for Subdivision O (September, 1995) indicates that data on cotton gin byproducts (commonly called gin trash) are required. The registrant must propose a tolerance for this commodity

The registrant must also propose a tolerance for grass hay.

Food/Feed Additive Tolerance Issues

Since dichlorvos is considered a carcinogen by the Agency, CBRS defers to OGC regarding the establishment of tolerances for commodities associated with processed fractions in which dichlorvos residue concentrate.

Adequate processing studies have been submitted for cottonseed, grapes, oranges, and soybeans. Processing studies involving rice, soybeans, and tomatoes will not be required provided all registered uses of naled on these crops are canceled.

The combined residues of naled and dichlorvos are not expected to concentrate in the processed commodities of grapes, oranges, and soybeans, except for orange oil. However, the available orange processing study indicates that residues of dichlorvos concentrated in oil 13x during processing of oil treated with naled; residues of dichlorvos did not concentrate in the citrus processed commodities wet pulp, dried pulp, molasses, and juice. Residues of naled were non-detectable both before and after processing of orange commodities. CBRS previously concluded that for the purposes of establishing food additive tolerances, if appropriate, the combined residues of naled and dichlorvos will be assumed to concentrate 13x during processing of citrus treated with naled. Since a 13x concentration is less than the expected dilution of orange oil, an MRL should be established under Section 701 of FFDCA at 30 ppm.

Table C. Tolerance Reassessment Summary for Naled.

| Commodity | Current Tolerance (ppm) | Tolerance Reassessment (ppm) | [Correct Commodity Definition]/ Comment |
|--|-------------------------|------------------------------|--|
| Tolerances Listed Under 40 CFR §180.215 | | | |
| Almonds (hulls) | 0.5 | 0.5 | [Almonds, hulls] |
| Almonds (nuts) | 0.5 | 0.5 | [Almonds, nutmeats] |
| Beans (dry) | 0.5 | 0.05 | [Beans, dry] |
| Beans (succulent) | 0.5 | 0.05 | [Beans, succulent] |
| Beets, sugar, roots | 0.5 | 0.05 | [Sugar beets, roots] |
| Beets, sugar, tops | 0.5 | 0.5 | [Sugar beets, tops] |
| Broccoli | 1 | TBD * | |
| Brussels sprouts | 1 | TBD * | |
| Cabbage | 1 | TBD * | |
| Cattle, fat | 0.05 | 0.05 | |
| Cattle, mbyp | 0.05 | 0.05 | |
| Cattle, meat | 0.05 | 0.05 | |
| Cauliflower | 1 | TBD * | |
| Celery | 3 | 2 | |
| Collards | 3 | TBD * | |
| Cottonseed | 0.5 | 0.05 | [Cotton, undelinted seed] |
| Cucumbers | 0.5 | Revoke | The tolerance should be revoked unless registrants other than Valent intend to support the use of naled on cucumbers and submit additional data. |
| Eggplant | 0.5 | 0.5 | |
| Eggs | 0.05 | 0.05 | |
| Goats, fat | 0.05 | 0.05 | |
| Goats, mbyp | 0.05 | 0.05 | |
| Goats, meat | 0.05 | 0.05 | |
| Grapefruit | 3 | Revoke | The tolerance should be revoked concomitant with the establishment of a crop group tolerance for citrus fruits group. |
| Grapes | 0.5 | 0.05 | |
| Grasses, forage | 10 | 10 | [Grass, forage] |
| Hogs, fat | 0.05 | 0.05 | |
| Hogs, mbyp | 0.05 | 0.05 | |
| Hogs, meat | 0.05 | 0.05 | |

Table C. (continued).

| Commodity | Current Tolerance (ppm) | Tolerance Reassessment (ppm) | [Correct Commodity Definition]/ Comment |
|------------------|-------------------------|------------------------------|--|
| Hops | 0.5 | 0.5 | [Hops cones, dried] |
| Horses, fat | 0.05 | 0.05 | |
| Horses, mby | 0.05 | 0.05 | |
| Horses, meat | 0.05 | 0.05 | |
| Kale | 3 | TBD * | |
| Legumes, forage | 10 | Revoke | |
| Lemons | 3 | Revoke | The tolerance should be revoked concomitant with the establishment of a crop group tolerance for citrus fruits group. |
| Lettuce | 1 | Revoke | The tolerance should be revoked unless Valent or registrants other than Valent intend to support the use of naled on lettuce and submit additional data. |
| Melons | 0.5 | 0.5 | |
| Milk | 0.05 | 0.05 | |
| Mushrooms | 0.5 | Revoke | The tolerance should be revoked unless registrants other than Valent intend to support the use of naled on mushrooms and submit additional data. |
| Oranges | 3 | Revoke | The tolerance should be revoked concomitant with the establishment of a crop group tolerance for citrus fruits group. |
| Peaches | 0.5 | 0.5 | |
| Peas (succulent) | 0.5 | 0.05 | [Peas, succulent] |
| Peppers | 0.5 | 0.5 | |
| Poultry, fat | 0.05 | 0.05 | |
| Poultry, mby | 0.05 | 0.05 | |
| Poultry, meat | 0.05 | 0.05 | |
| Pumpkins | 0.5 | TBD * | |
| Rice | 0.5 | Revoke | The tolerance should be revoked unless registrants other than Valent intend to support the use of naled on rice and submit additional data. |
| Safflower, seed | 0.5 | 0.5 | |
| Sheep, fat | 0.05 | 0.05 | |
| Sheep, mby | 0.05 | 0.05 | |

Table C. (continued).

| Commodity | Current Tolerance (ppm) | Tolerance Reassessment (ppm) | [Correct Commodity Definition]/ Comment |
|---|-------------------------|------------------------------|---|
| Sheep, meat | 0.05 | 0.05 | |
| Spinach | 3 | 3 | |
| Squash, summer | 0.5 | 0.5 | |
| Squash, winter | 0.5 | TBD * | |
| Strawberries | 1 | 1 | |
| Swiss chard | 3 | 3 | |
| Tangerines | 3 | 3 | |
| Tomatoes | 0.5 | Revoke | The tolerance should be revoked unless registrants other than Valent intend to support the use of naled on tomatoes and submit additional data. |
| Turnips, tops | 3 | Revoke | The tolerance should be revoked unless registrants other than Valent intend to support the use of naled on turnips and submit additional data. |
| Walnuts | 0.5 | 0.5 | |
| Tolerances That Need To Be Proposed Under 40 CFR §180.215 | | | |
| Cowpeas, forage | None | 1 | |
| Cowpeas, hay | None | TBD * | |
| Citrus fruits group | None | 3 | |
| Cotton, gin byproducts | None | 0.05 | |
| Grass, hay | None | TBD * | |
| Peas, field, hay | None | 1 | |
| Peas, field, vines | None | TBD * | |
| Maximum Residue Limits (MRLs) That Need To Be Proposed Under Section 701 | | | |
| Citrus, oil | None | 30 | |

* TBD = To be determined. Reassessment of tolerance(s) cannot be made at this time because additional data are required. Valent plans to propose a crop group tolerance for brassica leafy vegetables.

CODEX HARMONIZATION

There are no Codex MRLs established or proposed for residues of naled. Therefore, there are no questions with respect to compatibility of U.S. tolerances with Codex MRLs.

DIETARY EXPOSURE

A reasonably reliable risk assessment for combined residues of naled and can be done for the uses of naled. Anticipated residues for combined residues of naled and dichlorvos are presented in D. McNeilly memo of 2/27/92. Combined residues of naled and dichlorvos in citrus oils should be considered to concentrate by 13x. Dichlorvos is a metabolite of naled. A dietary exposure assessment for dichlorvos residues including those resulting from the use of naled is in preparation in support of the Special Review of dichlorvos.

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CBRS No.: None
DP Barcode: None
Subject: Addenda to the Naled Registration Standard. Poultry Metabolism Studies.
[Data Volume Identified: Chevron Naled Technical (Reg. No. 239-1633)].
From: G. Makhijani, HED
To: W. Miller, RD
Dated: 09/27/84
MRID(s): 126462 and 126463

CBRS No.: None
DP Barcode: None
Subject: Addendum to the Naled Registration Standard
From: C. Trichilo, HED
To: A. Rispin, HED and W. Miller, RD
Dated: 09/20/85
MRID(s): None

CB No.: 160
DP Barcode: None
Subject: Naled Registration Standard; Comment on Toxicology Branch Request for
Review of Additional Plant and Animal Metabolism Studies.
From: C. Trichilo, HED
To: A. Rispin, HED and W. Miller, RD
Dated: 02/06/86
MRID(s): 00126462 and 00154126

CB No.: 1931
DP Barcode: None
Subject: 239-1281. Amended Registration. Naled on Beans, Peas, and Citrus.
Accession # 263593.
From: L. Cheng, HED
To: W. Miller/G. Otakie, RD
Dated: 03/30/87
MRID(s): 0160765

CB No(s): 3397-3399
DP Barcode: None
Subject: Chevron Chemical Co. Follow up to the Naled Registration Standard - Residue Data for Fly and Mosquito Label Uses [Record Nos. 214572, 214593, and 214659.
From: D. Edwards, HED
To: W. Miller, RD
Dated: 04/05/88
MRID(s): 40407300 and -01, and 40506400 and -01

CB No.: 4009
DP Barcode: None
Subject: Naled; Residue Field Trial for Fly and Mosquito Label Uses (Addendum to MRID Nos. 40407300, -01, 40506400, and -01.
From: F. Suhre, HED
To: D. Peacock, RD
Dated: 09/07/88
MRID: 40633600

CB No.: None
DP Barcode: None
Subject: Follow up to the Naled Registration Standard; Review of Method Validation Report for Chevron Chemical Co.'s Method RM-3G-4 with Addendum (Determination of Naled and DDVP Residues in Crops).
From: E. Haeberer, CBTS, HED
To: W. Miller, RD, and L. Rossi, SRRD
Dated: 01/10/90
MRID: 40506401

CBRS No.: 10426
DP Barcode: D181565
Subject: Naled, Reregistration. Processing Study in Orange.
From: J. Abbotts, CBRS, HED
To: B. Lowery, SRRD
Dated: 11/18/92
MRID: 42262801

CB No.: 10979
DP Barcode: D184519
Subject: Naled (1,2-Dibromo-2,2-Dichloroethyl Dimethylphosphate; Case #: 818772)
Special Cooking and Processing Studies to Determine Reduction in Residues:
GDLN Requirements 171-E-SS & 171-L-SS.
From: D. McNeilly, CBRS, HED
To: B. Lowery, SRRD
Dated: 04/14/93
MRID(s): 42529606, -07, -08, and -09

CB No.: 11759
DP Barcode: D190566
Subject: Naled (1,2-Dibromo-2,2-Dichloroethyl Dimethylphosphate; Case #: 818772).
Valent's Response to CBRS Review of Orange Processing Study.
From: D. McNeilly, CBRS, HED
To: B. Lowery, SRRD
Dated: 05/12/93
MRID(s): None

CB No.: None
DP Barcode: None
Subject: Animal Feeding Studies (171-4(j)); Requirement Status Modification.
From: M. Metzger, CBRS, HED
To: L. Rossi, SRRD
Dated: 09/09/93
MRID(s): None

CB No.: 12128
DP Barcode: D192667
Subject: Naled: Request from Valent Chemical Co. to Reinstate Voluntarily Canceled
Uses.
From: D. McNeilly, CBRS, HED
To: R. Cromwell, RD
Dated: 12/16/93
MRID(s): None

CB No.: 13695
DP Barcode: D202661
Subject: Naled: Reregistration: Analytical Methodology, Grape and Cottonseed
Processing Studies
From: S. Hummel, CBRS, HED
To: B. Lowery, PM#72, SRRD
Dated: 07/18/94
MRID(s): 43189605, 43189603, 43189606

CB No.: 13996
DP Barcode: D205422
Subject: Addendum to RED: Storage Stability Study (almond nutmeat, almond hulls, walnut nutmeat and safflower seeds) (GDLN 171-4(e)), Reported Storage Intervals and Conditions (GDLN 171-4(e)), and Magnitude of the Residue Study in Spinach (GDLN 171-4(k)).
From: D. Miller, CBRS, HED
To: B. Lowery, PM#72, SRRD
Dated: 09/17/94
MRID(s): 43223908, 43223909, and 43223910

CB No.: 14938
DP Barcode: D210716
Subject: Addendum to RED: Response to 12/7/94 letter from Valent Re: Magnitude of the Residue in Spinach.
From: D. Miller, CBRS, HED
To: B. Edwards, PM#14, SRRD
Dated: 01/31/95
MRID(s): None

MASTER RECORD IDENTIFICATION NUMBERS

References used to support established tolerances:

00059386 Casida, J.E.; McBride, L.; Niedermeier, R.P. (1961) Metabolism of O,O-Dimethyl 2,2-dichlorovinyl phosphate (Vapona® or DDVP) in Relation to Residues in Milk and Mammalian Tissues. (Unpublished study received on unknown date under unknown admin. no.; prepared by Univ. of Wisconsin, Depts. of Entomology and Dairy Husbandry, submitted by Shell Chemical Co., Washington, D.C.; CDL:120596-C)

00073815 Chevron Chemical Company (1971) Bromide Ion Residues Resulting from the Use of Dibrom® (Naled) on Forage Crops. (Compilation; unpublished study, including test nos. T-2175 and T-2176, received Sep 21, 1972 under 0F0975; CDL:091678-A)

00073816 Chevron Chemical Company (1972) [Total Bromide Ion Levels in Alfalfa, Pasture and Range Grass]. (Compilation; unpublished study received on unknown date under 0F0975; CDL:091678-B)

00073817 Chevron Chemical Company (1972) [Bromide Ion Concentrations of Grapes Treated with Naled]. (Compilation; unpublished study received on unknown date under 0F0975; CDL:091678-C)

00073818 Chevron Chemical Company (1971) [Residue Data Sheets of Naled on Alfalfa]: Test No. T-2177. (Compilation; unpublished study, including test no. T-2178, received Aug 20, 1973 under 0F0975; CDL:091679-E)

00073819 Chevron Chemical Company (1971) [Residue Data Sheets of Naled on Sugar Beets]: Test No. T-2179. (Compilation; unpublished study received Aug 20, 1973 under 0F0975; CDL:091679-F)

00073820 Chevron Chemical Company (1966) Dibrom® Naled: The Results of Tests on the Amount of Residue Remaining Including a Description of the Analytical Methods Used. Includes residue methods RM-3 dated Jul 28, 1966, RM-3A dated Aug 18, 1966, RM-3C dated Aug 22, 1966 and RM-3E dated Aug 16, 1966. (Compilation; unpublished study received Sep 20, 1966 under 7F0532; CDL:090647-A)

00073821 Chevron Chemical Company (1970) Dibrom® Naled: The Results of Tests on the Amount of Residue Remaining Including a Description of the Analytical Methods Used. Includes methods RM-3 dated Jul 28, 1966, RM-3A dated Aug 18, 1966 and RM-3G dated Oct 31, 1969. (Compilation; unpublished study received Mar 27, 1970 under 0F0975; CDL:091677-A)

00073830 Chevron Chemical Company (1974) Summary of Almond Residue Trials. (Compilation; unpublished study received Apr 7, 1975 under 5F1614; CDL:094559-B)

00073846 Chevron Chemical Company (1970) Dibrom® Naled: The Results of Tests on the Amount of Residue Remaining, Including a Description of the Analytical Methods Used. (Compilation; unpublished study received on unknown date under 1F1078; CDL:093389-B)

00074647 Chevron Chemical Company (1966) Analysis of Dibrom® Naled Residues by Acetylcholinesterase Inhibition: File 740.10. Method RM-3 dated Jul 28, 1966. (Unpublished study received Sep 12, 1966 under 7F0532; CDL:092821-A)

00074654 Chevron Chemical Company (1966) Naled: The Degradation and Metabolic Fate in Biological Media. Rev. (Unpublished study received Sep 12, 1966 under 7F0532; CDL:092821-I)

00074692 Chevron Chemical Company (1971?) Description of a Residue Test (T-2360) To Determine Bromide Ion Residues in Poultry Tissue and Eggs following the Application of Ortho Fly Killer D (36% Naled) in Poultry Houses and on Laying Hens: File No. 741.11. (Unpublished study received Mar 4, 1972 under 1F1111; CDL:090881-B)

00074699 Kohn, G.K. (1959) Letter sent to G.S. Hensill dated Dec 16, 1959: Dibrom residues--pole beans. (Unpublished study received Jan 14, 1960 under 239-1281; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:119766-A)

00074700 Chevron Chemical Company (1965) [Dibrom Residues in Spinach, Grain Sorghum and Cotton]. (Compilation; unpublished study received Jul 9, 1965 under unknown admin. no.; CDL:124538-A)

00074721 Chevron Chemical Company (1957?) Analysis of Dibrom Residues. Undated method RM-III. (Unpublished study received Feb 19, 1958 under unknown admin. no.; CDL:119738-A)

00074722 Kohn, G.K. (1958) Letter sent to G.S. Hensill dated Feb 14, 1958: Dibrom residues. (Unpublished study received Feb 19, 1958 under unknown admin. no.; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:119738-B)

00074723 Chevron Chemical Company (1964) [Residue Data Sheets: Dibrom in Rice]: Test No. T-508. (Compilation; unpublished study, including test nos. T-551 and T-544, received Mar 12, 1965 under unknown admin. no.; CDL:119745-F)

00074725 Chevron Chemical Company (19??) Proof of Recovery of Dibrom from Fortified Crop Extracts Utilizing Standard Procedure. (Unpublished study received Jan 23, 1959 under unknown admin. no.; CDL:119737-A)

00074728 Sessions, A.; Pack, D.E. (1959) Residue Data Sheet: Grapes: Test No. T-76. (Unpublished study received Jan 23, 1959 under unknown admin. no.; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:119737-D)

00074729 Wegenek, E.G.; Pack, D.E. (1959) Residue Data Sheet: Beans: Test No. T-87. (Unpublished study received Jan 23, 1959 under unknown admin. no.; submitted by Chevron Chemical Co., Richmond, Calif.; CDL:119737-E)

00074806 California Chemical Company (1961) Project Report--Dibrom Residue: Analytical Procedures: File 740.10. (Unpublished study received Feb 21, 1963 under PP0330; CDL:090359-D)

00074807 Ospenson, J.N. (1963) Letter sent to G.K. Kohn dated Feb 14, 1963: Dibrom and metabolite residue studies on oranges and lettuce. (Unpublished study received Feb 21, 1963 under PP0330; submitted by California Chemical Co., Richmond, Calif.; CDL:090359-I)

00074836 California Chemical Company (1960) Summary of Typical Dibrom Residue Data in This Petition. (Compilation; unpublished study received Sep 1, 1961 under PP0330; CDL:090357-J)

00074844 Casida, J.E.; McBride, L.; Niedermeier, R.P. (1961) Metabolism of O,O-Dimethyl 2,2-Dichlorovinyl Phosphate (Vapona® or DDVP) in Relation to Residues in Milk and Mammalian Tissues. (Unpublished study received Aug 20, 1962 under PP0330; prepared by Univ. of Wisconsin, Depts. of Entomology and Dairy Husbandry, submitted by California Chemical Co., Richmond, Calif.; CDL:090358-H)

00074845 Chevron Chemical Company (1973) [Summary and Data on Residues of Naled in Cotton and Safflower]. (Compilation; unpublished study received Jan 9, 1974 under 1F1078; CDL:093391-A)

00075668 Chevron Chemical Company (1961) [Residue of Dibrom on the Tomato and Cucumber]: CSC-513 No. 502-6. (Compilation; unpublished study, including report nos. CSC-513 no. 502-5, CSC-513 no. 502-4, CSC-513 no. 502-2 and CSC-513 no. 502-3, received Jul 24, 1961 under 239-1466; CDL:119776-A)

00126462 Cheng, H.; Tucker, B. (1983) Metabolic Fate of Naled in Chickens after a Single Oral Dose of (Ethyl-1-14C)-naled: File No. 721.14/Naled. (Unpublished study received Mar 9, 1983 under 239-1633; submitted by Chevron Chemical Co., Richmond, CA; CDL: 249713-A)

00126463 Cheng, H.; Tucker, B. (1983) Characterization of ¹⁴C in Chicken Tissues and Eggs after Dosing with (Ethyl-¹⁴C)-Naled for 10 Consecutive Days: File No. 721.14/naled. (Unpublished study received Mar 9, 1983 under 239-1633; submitted by Chevron Chemical Co., Richmond, CA; CDL:249713-B)

00154126 Chen, Y. (1981) Degradation Products of Ethyl-¹⁴-carbon 14 -Naled in Tomato and Orange Processed Parts: File No. 721.14. Unpublished study prepared by Chevron Chemical Co. 22 p. (CDL:2599701)

00160765 Breault, G. (1986) Residue of Naled and DDVP in Crops: Laboratory Project Identification: R-196. Unpublished study prepared by Chevron Chemical Co. 342 p. (CDL:263593A)

40376601 Breault, G. (1987) Naled Citrus Residue Studies: Laboratory Project ID: R196-6874. Unpublished study prepared by Chevron Chemical Co. 11 p.

40407301 Lee, S. (1987) Dibrom 8E Trials for Supporting Mosquito and Fly Label: Lab. Proj. ID 8725925. Unpublished compilation prepared by Chevron Chemical Co. 12 p.

40506401 Lee, S. (1988) Residue Trials in Support of Dibrom Mosquito and Fly Control Use [on Various Raw Agricultural Commodities]: Project No. R196LABEL. Unpublished study prepared by Chevron Chemical Co. 242 p.

40605201 Lee, S. (1988) Magnitude of Dibrom Residues in Alfalfa: Laboratory Project ID R196MRALFALFA. Unpublished study prepared by Chevron Chemical Co. 100 p.

40633601 Lee, S. (1988) Residue Trial in Support of Dibrom Mosquito and Fly Control Use: Final Report: Project ID: R196LABEL. Unpublished study prepared by Chevron Chemical Co. 256 p.

42262801 Pensyl, J. (1992) Magnitude of the Residues of Naled and its Conversion Product DDVP in Oranges and Orange Processing Products: Lab Project Number: 1714/91/ORANGE. Unpublished study prepared by Chevron Chemical Co. 733 p.

42529606 Pensyl, J. (1992) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Celery: Decline from Field to Consumer: Lab Project Number: 1710/92/V-1035. Unpublished study prepared by Valent USA Corp. 218 p.

42529607 Pensyl, J. (1992) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Collards: Decline from Field to Consumer: Lab Project Number: 1710/92/V-1037. Unpublished study prepared by Valent USA Corp. 218 p.

42529608 Pensyl, J. (1992) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Strawberries: Decline from Field to Consumer: Lab Project Number: 1710/92/V-1036. Unpublished study prepared by Valent USA Corp. 188 p.

42529609 Pensyl, J. (1992) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Oranges: Decline from Field to Consumer: Lab Project Number: 1710/92/V-1034. Unpublished study prepared by Valent USA Corp. 243 p.

43065101 Pensyl, J. W. (1993) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Snap Beans and Snap Bean Processed Commodities. Lab Project Identification: VP-10137. Unpublished study prepared by Valent USA Corporation. 209 p.

43189602 Pensyl, J. (1994) Revised Analytical Method for the Determination of Naled and DDVP Residues in Crops-Method RM-3G-4. Lab Project Number: VP-10818. Unpublished study prepared by Valent USA Corp. 15 p.

43189603 Erhardt-Zabik, S.; Kuo, A.; Ruzo, L. (1994) Quantitation of Residues of Naled and DDVP in Grapes and Grape Matrices. Lab Project Number: 200W. Unpublished study conducted by PTRL West, Inc. (Richmond, CA) and submitted by Valent USA Corp. 541 p.

43189604 Curry, K. and Brookman, D. (1994) Supplemental Report to "Quantitation of Residues of Naled and DDVP in Grapes and Grape Matrices" (PTRL Project No. 200W). Determination of the Potential for Residue Concentration in Processed Grape Commodities from Grapes Treated with Dibrom® 8 Emulsive. Laboratory Project Number: 200W-2. Unpublished study conducted by PTRL West, Inc. (Richmond, CA) and submitted by Valent USA Corp. 38 p.

43189605 Erhardt-Zabik S. and Ruzo, L. (1994) Method Validation of Naled and DDVP Analysis on Grapes and Grape Juice. "Amended Report". Laboratory Project Number: 199W-1. Unpublished study conducted by PTRL West, Inc. (Richmond, CA) and submitted by Valent USA Corp. 37 p.

43189606 Pensyl, J. (1994) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Cotton and Cotton Processed Commodities. Laboratory Project Number: VP-10644. Unpublished study prepared by Valent USA Corp. 280 p.

43223908 Fay, D. P. (1994) Storage intervals and Conditions for Samples from Magnitude of the Residue Studies Conducted in Support of Naled Raw Agricultural Commodity Tolerances. Project Identification: 94-NAL-01. Unpublished study prepared by Valent USA Corp. 45 p.

43223909 Pensyl, J. W. (1994) Freezer Storage Stability of Naled and Its Conversion Product DDVP in Almonds, Walnuts and Safflower Seeds. Laboratory Project Identification: Valent Project No. VP-10803. Unpublished study conducted by Valent Corp. 165 p.

43223910 Pensyl, J. W. (1994) Magnitude of the Residues of Naled and Its Conversion Product DDVP in Spinach. Laboratory Project Identification: Valent Project No. VP-10645. Unpublished study conducted by Valent USA Corp. 289p.

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